

#trends  
2019







NIVIUK.COM > PARACHUTES

EN/LTF

# OCTAGON 2

## The security of feeling safe

The revolutionary octagonal design offers the best emergency solution for the pilot: a smooth, controlled descent with high stability, thanks to reduced oscillation and an incredibly low descent rate.

Discover the most Amazing Adventures on our Facebook and Instagram:



[facebook.com/Niviuk](https://facebook.com/Niviuk)



[instagram.com/Niviukparagliders](https://instagram.com/Niviukparagliders)





The photographer Christian Gruber accompanied "Mad Mike Küng" during one of his numerous travels, here in Morocco. The photo was taken from the new book about Mike which will soon be available.

Once again there are numerous trends concerning 'Light' and 'hike&fly' in 2019. It's nicely timed as it's the year of the Red Bull X-Alps, or to put it more precisely, the 9th edition of this completely mad race, which will encourage many pilots to make the most of the mountains before and after flying, on foot and whilst bivouacking...

Translation by Ruth Jessop

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# NEWS ADVANCE EPSILON 9

The ninth generation of this intermediate wing, placed in the middle of the EN/LTF-B classification, came out at the beginning of 2019 and will have even better performance and more precise steering. It is also better in turbulence where it remains well behaved according to Advance, who claim that 'all these improvements have been made without the slightest compromise in terms of passive safety.'

It includes miniribs with internal stitching, 'ultramodern' hybrid lines, low drag stabilos, and also has all the usual tried and tested features, such as, Sliced Diagonals, Advanced Airscoop, double 3D-Shaping and the Quick Snap system for putting in ears...

Available for the first time in five sizes with "Seamless Weight Ranges", covering a range of certified weights from 60 to 128 kg at take-off.







Photos: Advance

# ADVANCE XI QUICK TEST

*The Advance Xi is a lightweight version of the Iota 2, specifically designed for hike and fly.*

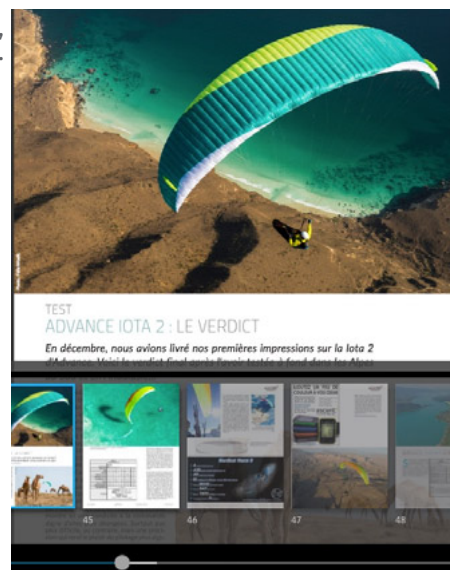
By Philippe Lami

It seems just like an Iota 2, a very successful wing and one of the current best sellers in its EN B+ category.

But when looked at more closely, whilst the aspect ratio, surface and curvature are identical, there are apparent differences: the fabric is lighter, with lots of Porcher 27 g/m<sup>2</sup> being used (except the leading edge which is in 32 universal), and the internal structure has been further reduced and made lighter. The Xi has lost 2 cells compared to the Iota 2 and is therefore an ultralight version (3.8 kg for 25 m<sup>2</sup>) of its almost identical twin sister (4.85 kg for 25 m<sup>2</sup>). It offers already experienced pilots a wing which is more compact in the bag and is gentler both as far as the weight and the controls are concerned.

Lines are 100% unsheathed Edelrid, treated against UV and fluid to untangle. Great finish in every detail. It is child's play

Reminder: the **full test of the Iota 2**, which weighs an extra kilo.





to inflate, docile and easy. The wing feels as if it is on rails in the air with even lighter piloting which is almost always automatically the case for a lighter version of any model.

The performance in glide and speed is equivalent to that of the Iota 2, making it suitable for any XC foreseeable in our lands, no problem at all. The accelerator gives an improvement of 11 km/h and the wing is still very solid. Kari Eisenhut (designer at Advance), flew past Saint-André-les-Alpes this summer whilst crossing the Alps travelling from the sea to Switzerland on the Xi, to demonstrate the day to day efficiency and soundness of this relaxing wing when flying more than 100 km every day in laid back mode!

As far as I am concerned, I adore flying this lovely wing. It's easy and precise, without any excesses in communication and performance. Of course, I also loved the small amount of space it takes up in a back pack climbing up to take-off.

#### SUMMARY

The Xi is a great success, surfing on the Iota 2 wave, but lighter still! In fact, it opens up even more horizons, with even more comfort for hike and fly and obvious in-flight efficiency. How much does this reduction in weight cost? Reckon on 4290 € (that's 200 euros more than the Iota 2) for a saving of 1 kilo in your back pack.

[www.advance.ch](http://www.advance.ch) 

These photos, taken during an outing organised by Advance, perfectly demonstrate its value for hike and fly.

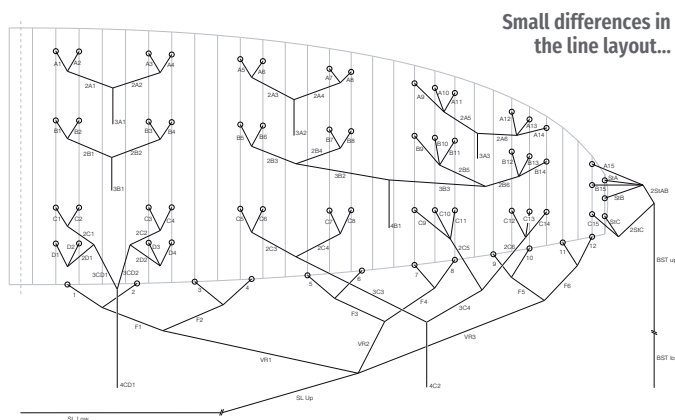
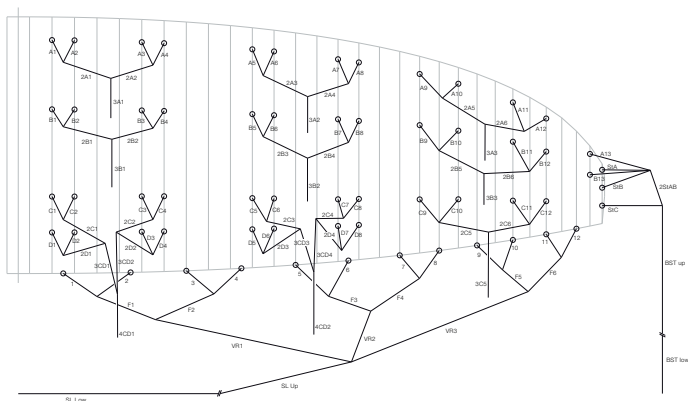


Photos: Advance





ADVANCEXI 21 / 23 / 25 / 27 / 29



IOTA 2 MANUFACTURER DATA					
YEAR	2018	2018	2018	2018	2018
SIZE	21	23	25	27	29
CELLS	59	59	59	59	59
FLAT SURFACE AREA [m²]	21.8	23.7	25.7	27.7	29.7
FLAT WINGSPAN [m]	11.1	11.5	12	12.5	12.9
FLAT ASPECT RATIO	5.6	5.6	5.6	5.6	5.6
Ideal all-up weight (kg)	65-75	75-85	85-97	97-110	110-125
Certified all-up wt (kg)	60-77	70-88	80-100	92-114	105-128
Weight of the wing (kg)	4.3	4.6	4.85	5.15	5.4
CERTIFICATION EN/LTF	B	B	B	B	B
TESTING HOUSE	Air Turquoise 02/2018				
FABRIC	<b>Leading edge</b> Skytex 38, 9017 E25 <b>Upper surface</b> Skytex 32 Universal 70032 E3W <b>Lower surface</b> Skytex 32 Universal 70032 E3W				

XI MANUFACTURER DATA					
YEAR	2018	2018	2018	2018	2018
SIZE	21	23	25	27	29
CELLS	57	57	57	57	57
FLAT SURFACE AREA [m <sup>2</sup> ]	21.8	23.7	25.7	27.7	29.7
FLAT WING SPAN [m]	11.1	11.5	12	12.5	12.9
FLAT ASPECT RATIO	5.6	5.6	5.6	5.6	5.6
Ideal all-up weight (kg)	65-75	75-85	85-97	97-110	110-125
Certified all-up wt (kg)	60-77	70-88	80-100	92-114	105-128
Weight of the wing (kg)	3.4	3.6	3.8	4.05	4.3
CERTIFICATION EN/LTF	B	B	B	B	B
TESTING HOUSE	Air Turquoise 08/2018				
FABRIC	<b>Leading edge</b> Skytex 32 Universal <b>Upper surface</b> Skytex 27 Classic 2 <b>Lower surface</b> Skytex 27 Classic 2				





# SWIFT 5

The Swift 5 is based on the Rush 5, and is 30% lighter. It is a top of class Lightweight Sport-Performance- Intermediate wing. We developed the Swift 5 using technology from our performance range, this includes features from the Enzo 3 and Zeno in addition to several recent innovations. Learn more at:

[WWW.FLYOZONE.COM](http://WWW.FLYOZONE.COM)

Pilot: **Brian Cork** Photo: **Jorge Atramiz**





The classic Hook 5

# NIVIUK HOOK 5 / HOOK 5P

## THE PROGRESSION WING

The entry level/mid EN B wing from Niviuk appeared in 2019 in its fifth version, both in a classic and lightweight 'P' version. The latter is currently being finalised. The weights are still not fully confirmed for all the sizes.

Interesting: The Hook 4 P was an EN B like the classic Hook 4, but the Hook 5 P aims to be "EN A+" whilst the Hook 5 classic remains an EN B.

There's no doubt that it's the typically, more damped behaviour (in the large amplitudes!) in the lightweight version which has allowed this surprising change of classification.

<http://www.niviuk.com>

Modern lightweight  
manufacture: inside the  
Hook 5 P





## THE HOOK 5 "CLASSIC"



## THE HOOK 5 "P"







A clip from the promotional video for the Hook 5

Hook 5P



HOOK 5 / HOOK 5P TECHNICAL DATA						
MANUFACTURER : NIVIUK						
Web : <a href="https://indd.adobe.com/view/f96ec816-9f60-45f2-90f6-1075ef0836aa">https://indd.adobe.com/view/f96ec816-9f60-45f2-90f6-1075ef0836aa</a>						
DATE	2019					
SIZE	20/20	22/22	24/24	26/26	28/28	31
CELLS	47	47	47	47	47	47
FLAT SURFACE AREA [m²]	20	22	24	26	28	31
FLAT WINGSPAN [m]	2.42	2.54	2.66	2.76	2.87	3.02
FLAT ASPECT RATIO	5.3	5.3	5.3	5.3	5.3	5.3
ALL UP WEIGHT [kg]	55-70	60-80	70-92	82-105	95-120	110-135
WEIGHT OF THE WING [kg]	70-85	60-95	70-105	82-120		
FREE FLIGHT CERTIFICATION	3.9 / 3.15	4.3 / 3.4	4.6 / 3.65	4.9 / 3.9	5.2 / 4.15	5.5
HOOK 5 CERTIFICATION	(B) in progress	B	B	B	(B) in progress	(B) in progress
HOOK 5 P CERTIFICATION	(A+) in progress					
PRICE [€]	3730/3930	3730/3930	3730/3930	3730/3930	3730/3930	3730/3930
Materials: Hook 5: Dominico N20 36g/m² /						
Hook 5P: Upper surface Skytex 32 g/m² - Lower surface Skytex 27 g/m²						





Photo: Felix Wolk/Red Bull X-Alps

More than a thousand kilometres across the Alps, either flying or on foot...

# RED BULL X-ALPS 2019

*The hike&fly race covering more than 1000 kilometres, from Salzburg in Austria to Monaco will take place again this summer.*

## THE COUNTDOWN

The list of participants has been known since last autumn: an interesting mix and balance of 'veterans' and new faces; see the following page.

Since the 12th of March 2019 we know the route: that was a date eagerly awaited by all.

The kick-off will be on the 13th of June with the prologue and the real race starts on the 16th of June.

[www.redbullxalps.com](http://www.redbullxalps.com)





# MAESTRO

High B  
the comeback

PHI-AIR.COM

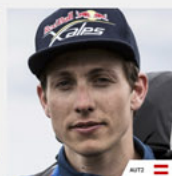
We've known the  
selection list  
since last  
autumn. An  
interesting mix,  
well balanced  
between  
veterans and  
new faces...

## ATHLETES



PAUL GUSCHLBAUER

VETERAN 4 RACES



SIMON OBERHAUSER

VETERAN 1 RACE



HELMUT SCHREMPF

ROOKIE



TOM DE GROOT

VETERAN 6 RACES



ALEX VILLA

VETERAN 1 RACE



THOMAS JUELL CHRISTENSEN

ROOKIE



BENOIT DUTTERS

VETERAN 1 RACE



GASPARD PETIT

VETERAN 2 RACES



ANTOINE GIRARD

VETERAN 2 RACES



MAXIME PINOT

ROOKIE



MANUEL NIBEL

VETERAN 2 RACES



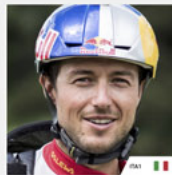
MARKUS ANDERS

ROOKIE



MARKO HRISTIC

ROOKIE



AARON BURGATTI

VETERAN 3 RACES



TOBIAS GROSSSCHÄDL

VETERAN 1 RACE



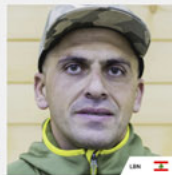
KAITO SUGAWARA

VETERAN 4 RACES



CHIKYONG HA

VETERAN 1 RACE



RODOLPHE AKL

ROOKIE



EDUARDO GARZA

ROOKIE



NICK HEYMANS

VETERAN 2 RACES



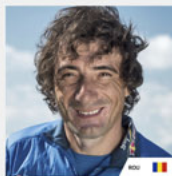
KINGA MASZTALERZ

ROOKIE



DOMINIKA KASIECZKO

ROOKIE



TOMA CIOCHNEA

VETERAN 3 RACES



EVGENI GIAZDOV

VETERAN 4 RACES



CHRISTIAN MAUGER

CHAMPION 5 RACES



PATRICK VON KÄNEL

ROOKIE



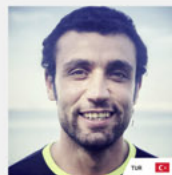
ADRIAN KELLER

ROOKIE



JURAJ KOBEN

ROOKIE



BORIS CELIK

ROOKIE



GAVIN MCLURG

VETERAN 2 RACES



WILL CANNELL

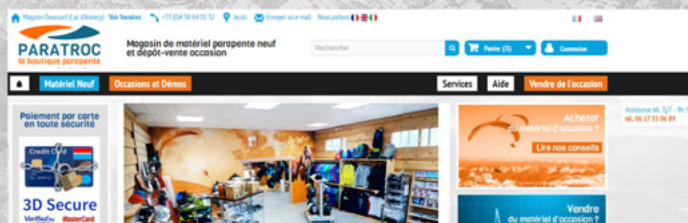
ROOKIE



CODY HITTACK

ROOKIE





**T**he new route has been revealed for the 2019 Red Bull X-Alps, which will be the most challenging in the event's 16-year history. Racing a straight-line distance of 1,138km from Salzburg to Monaco, 32 world class athletes from 20 countries including 2 women and 30 men will hike and fly via record-breaking 13 Turnpoints in 6 different countries - including Austria, Germany, Italy, Switzerland, France and last but not least Monaco. This exciting new development will make the world's toughest adventure race even more challenging and more unpredictable than ever before.

#### 2019 TURNPOINTS:

Start: Salzburg, Austria  
 TP 1: Gaisberg, Austria (Signboard)  
 TP 2: Wagrain-Kleinarl, Austria (Signboard)  
 TP 3: Aschau - Chiemsee, Germany (Signboard)  
 TP 4: Kronplatz, Italy (Signboard)  
 TP 5: Lermoos - Tiroler Zugspitz Arena (Zugspitze to be passed north; Signboard)  
 TP 6: Davos, Switzerland (Signboard)  
 TP 7: Titlis, Switzerland (Signboard)  
 TP 8: Eiger, Switzerland (passed in a radius of 1500m)  
 TP 9: Mont Blanc, France (to be passed north)  
 TP 10: St. Hilaire, France (Signboard)  
 TP 11: Monte Viso, Italy (passed in a radius of 2250m)  
 TP 12: Cheval Blanc, France (to be passed west)  
 TP 13: Peille, France (Signboard)  
 Finish: Monaco





The fascination of the X-Alps: hike&fly pushed to its limit. This competition has largely contributed to the development of this activity and the ubiquitous lightweight trend. In addition, this year, Porcher Sport, manufacturer of Skytex 27 fabric, will be an official sponsor of the X-Alps.





# MASALA

lightweight allrounder

LTF09: A | EN: A

*This glide expands  
my horizons -  
The MASALA turns every summit  
into a launch site!*

*Christin Kirst  
Hike & Fly Expert  
Skywalk Team Pilot*



Photo: Tristan Shu

## PURE PASSION FOR FLYING



skywalk.paragliders



skywalkparagliders

www.skywalk.info

# SKYWALK

The turn points have been announced on the 12th of March. They serve several purposes: on one hand, they add difficulty by forcing the pilots to follow certain routes and, on the other hand, they provide a meeting point between the spectators and the athletes.





# DUAL 2 TANDEM

38 m<sup>2</sup> 42 m<sup>2</sup>

## TWO STEPS AND AWAY

- ❖ Effortless two step launch
- ❖ Two sizes 38m<sup>2</sup> und 42m<sup>2</sup>
- ❖ Smooth, relaxed feel
- ❖ Essential big-ears blocker
- ❖ Replaceable trimmers



BCG  
BRUCE GOLDSMITH DESIGN

[www.flybgd.com](http://www.flybgd.com)



As in 2017, the X-Alps will, no doubt, bring us amazing footage taken in the grandiose landscapes along the alpine chain...

For the first time ever, the pilots will be equipped with Recco reflectors which will allow rapid detection from a helicopter. More details in our test of the Skywalk harness, the Range X-Alps...







The Skywalk Range X-Alps 2 harness. One of the rare comfortable cocoon harnesses weighing less than 2 kg...

# SKYWALK RANGE X-ALPS 2

## VERSION 2 OF THE ULTRALIGHT COCOON

The Range X-Alps 2 was used by X-Alps pilots Paul Guschlbauer, Simon Oberrauner and Ferdinand van Schelven.

The specifications: very aerodynamic, very low packed volume and ultralight.

Mission accomplished: we tested this harness weighing 1.8 kg, which only has a few competitors on the market in terms of ratio of comfort and aerodynamics to weight.

Over the following pages, you can see our photos and read our observations.

From now on, all the Skywalk Cult 4 and X-Alps 2 harnesses include a Recco reflector. It's a little electronic transponder made up of a copper antenna and a diode which weighs less than 4 grammes. Not requiring batteries, this simple instrument returns radar signals from the searchers, doubling the frequency from 917 MHz to 1834 MHz.



This system allows the reflector to be detected and the person wearing it to be found, even when buried, from a helicopter or on foot. Range: 120m, or even further, in free air, 10 – 20 m under the snow.

In addition, for a few euros, everyone can get this type of reflector and fix it onto their clothes for example, but you must choose the position carefully.





The harness in its stuff sack. Minuscule...



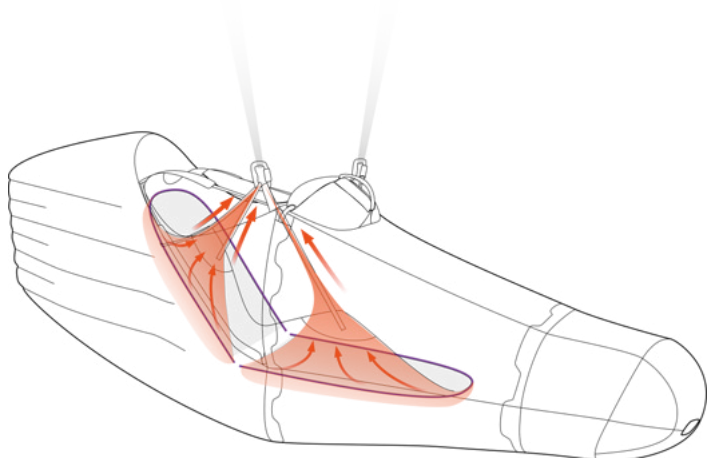
When we were unfolding it, we noticed the predominance of a fabric which resembles Skytex 32. But, in fact, it's a different fabric, Robic 32 g/m<sup>2</sup>



Ingenious: the stuff sack also inflates and is used as an integrated back protection in the harness.





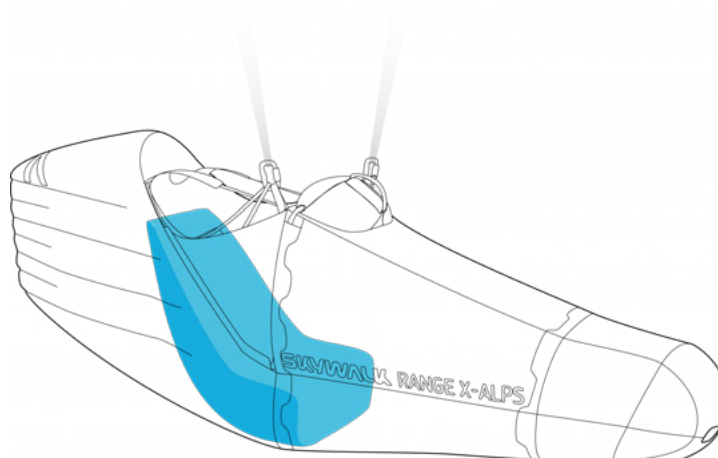


The Power Frame comprises a very light frame made from wire. Nonetheless it 'holds' the seat and the back very effectively, whilst adapting, according to Skywalk, to the morphology of the pilot.

We can confirm that this lightweight harness is very comfortable, as well as having good handling through weightshift and good stability in turbulence. If necessary, it is easy to move to an upright sitting position.

The inflatable protector (above right) contributes, without a doubt, to the comfort and stability of this harness.

A very nice little detail for most of those who enjoy Hike&Fly: on the side, there is a compartment for walking poles which reduces the risk of injury.



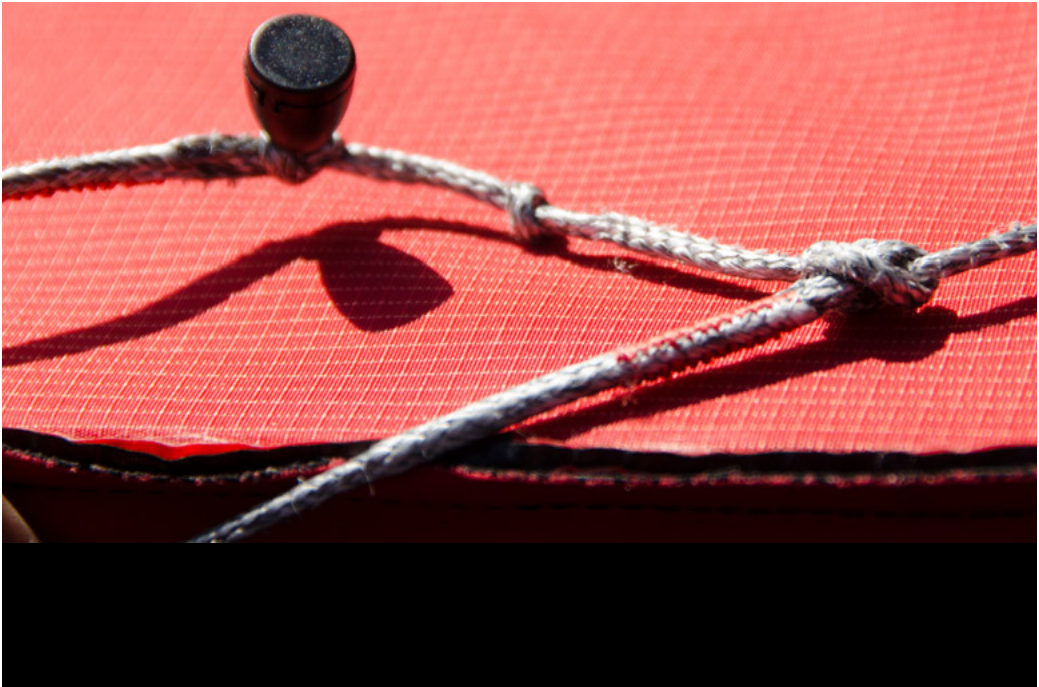


Some adjustments  
which can be done  
easily.

It's all more  
practical, more  
visible, more  
sophisticated and  
more aesthetic  
than on the  
previous version  
and all for the  
same weight.



Certain  
adjustments are  
done by moving a  
knot on a chord.



There is more  
storage space than  
you would  
imagine. Shown  
here, the  
compartment  
under the seat.





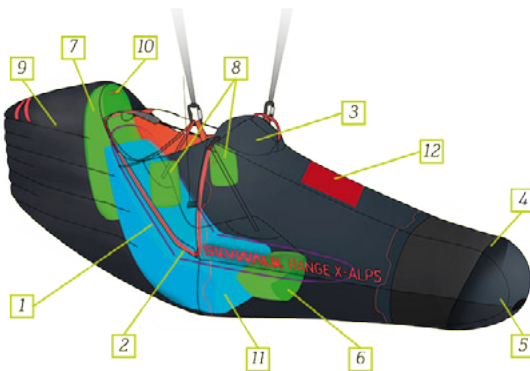


## SKYWALK RANGE X-ALPS 2

Sizes: S/M/L  
 Weights: 1.7kg/1.8kg/1.9kg  
 Maximum load: 100 daN  
 Harness certification: EN 1651/ Protection LTF91/09  
 Lightweight fabric: Robic 32g/m<sup>2</sup> double Rip-stop Nylon.  
 Price: 1490 €  
<https://skywalk.info/fr/project/range-x-alps-2/>

A lightweight Get-Up fastening system, simple and comfortable.  
 The only problem: the buckles could be a bit more practical to close.

- |                                     |                                     |
|-------------------------------------|-------------------------------------|
| 1 Power Frame                       | 7 Storage compartment „back“        |
| 2 Rescue chute V-Line channel       | 8 Lycra inner pockets               |
| 3 Front rescue system incl. cockpit | 9 Aerodynamically optimized fairing |
| 4 Carbon sandwich foot plate        | 10 RECCO reflector                  |
| 5 Air intake „Nose“                 | 11 PermaAir protector (18 cm / 32G) |
| 6 Storage compartment „seat“        | 12 Pole bag                         |



Conclusion: at almost every level, including aesthetics, there have been big improvements compared with the first version.  
 To reread the test we did in 2015:





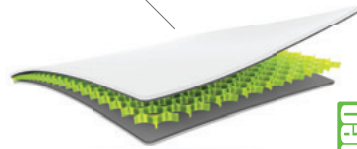


## string cover leg



WEIGHT: 715 g

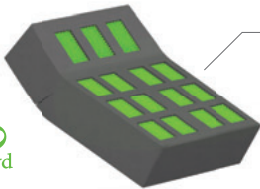
SANDWICH: TEXTILE LAMINATION



## stay up

WEIGHT: 1.45 kg

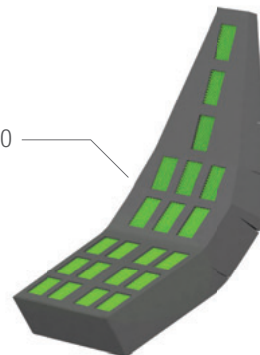
PROTECTION: NEO Koroyd 2.0



## suspender

WEIGHT: 3.85 kg

PROTECTION: NEO Koroyd 1.0





# MAKING AN X-ALPS WING



Photo: Phi

A very advanced version of the Phi Maestro X-Alps: this is the model which will compete in the famous hike&fly race. It's a lightweight version of the Maestro, so it's a three liner. Below: Hannes Papesh

*The wings made for the X-Alps have very specific specifications. Hannes Papesh from Phi explained some of the distinctive features to us that, as a manufacturer, he has to pay particular attention to.*

**D**esigning a wing for the X-Alps presents an interesting challenge. There are different constraints compared to classic wings. First of all, there is the deadline for certification. The wings must be certified before the 5th of March 2019, to take part in the race this year. This requires the design stage to be well organised. The pressure on the teams is enormous!

All the more so as, due to the winter weather conditions, development is a lot slower in our latitudes than in the summer. But they want to try and optimise the

wings right up until the last minute...

For the X-Alps, it isn't just a question of absolute performance (climb rate, glide, speed), but also of balance and ease of use in the extreme conditions which the pilots will inevitably face.

During the X-Alps, when it really becomes too strong, there is no 'task cancelled' as in the PWC... The pilots fly until they reach their own limits. Therefore, often in difficult conditions and for a long time. What is striking about this, are the fairly poor results of the two liners in the previous races, when they have far superior absolute performance!



Photo: Sascha Burkhardt





14./15. Nov. 2019

Forum Fürstenfeld

Fürstenfeldbruck near Munich

EUROPEAN  
PARAGLIDING  
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Professionals  
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*The design of the wing requires it to be very well suited to real conditions. The feedback from the pilots is essential in this respect. The specifications also include requirements such as:*

- easy to land out in narrow clearings
- a large margin for manoeuvring and good feedback when the pilot 'pumps' to descend in a vertical trajectory
- very simple to launch with the wing bunched up on narrow take offs.

*The X-Alps is also an endurance discipline. Contrary to tasks in the PWC, which aren't much longer today than they were 25 years ago, the X-Alps pilots fly for several hours and several days in a row. Therefore, they need well behaved wings, which forgive pilot fatigue! They need to have reserves of safety at all levels to remain in 'the green' for as long as possible.*

*Obviously, there is one aspect where you try to reach the limit: weight. Every gramme counts! In general, high-end wings in recent years have had an aspect ratio of 7, and have between 63 and 70 cells, a trend which is on the increase. For this type of complex construction, it was possible to manufacture a wing which weighs 3.2 kg, including the risers and measures 22.8 m<sup>2</sup> That's about 140 g per m<sup>2</sup> of surface area. A very good surface/weight ratio for high performance paragliders. Normal double surface wings, with a smaller aspect ratio, and therefore made in a simpler fashion, achieve 120 to 130 g per m<sup>2</sup> according to their size.*

The Maestro X-Alps is a Maestro Light...



Photo: Phi



# BEAMER<sup>3</sup>

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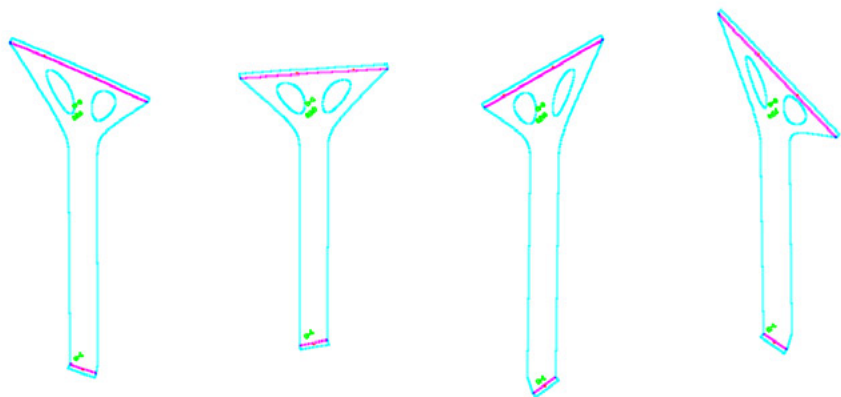


In the 2019 X-Alps, amongst the models entered by the manufacturers, there will be more 2 liners, probably weighing slightly more.

As a designer with Phi, I will be back after having been absent from the 2017 race.

In 2015 I was responsible for the reduction in weight at Advance and I developed the technique using 'trumpet' diagonals, called 'Needle Eye Ribs' elsewhere. You can now see this technique used in numerous wings of a standard weight, as it has become an element often employed by manufacturers who use my development software. The underlying idea is that if you want to use as little as possible of a certain material, you have to use it as efficiently as possible. This means that the fabric is loaded as much as possible only in the direction of the thread: the load bearing elements can be lighter and narrower. Besides, these diagonals can attach further on by means of an opening in an adjacent cell and thus allow a take-up of the forces on four or five cells whilst remaining light. Traditional diagonals are a lot heavier.

CAD-Screenshot: Hannes Papesh



Traditional diagonals are a lot heavier than these 'trumpet diagonals' developed by Hannes Papesh.



# LAS CANDELAS

## KICK-STARTING THE PARAMOTOR SEASON

*The Las Candelas meeting in the South of Spain is the traditional start to the paramotor season.*

Despite there being lots of wind there were some nice flyable windows on Saturday evening and on Sunday.







Photo: Mika Regnier/ITV

Skimming flights over green grass: the beginning of February in Andalusia feels just like spring time.

**A**t Las Candelas, a recurring trend was clearly visible: reducing weight and increasing technology, tried and tested in paragliders. Reflex wings are almost routinely equipped with SharkNose profiles. This technology can bring extra stability when flying fast, but also, according to several manufacturers, an increase in the speed range towards the lower end, allowing you to slow down more safely in thermals, for example.

Reducing the weight of the fabric can make inflation easier. At last! Pilots coming from free flying are often adversely surprised by the sluggishness of the inflation of certain older paramotor wings.

As far as the chassis is concerned, the reduction in weight continues: the Spanish company PAP, the king of robust stainless-steel, will also be using titanium too, from now on. And the French manufacturer **Air Conception**, an ardent critic of titanium, is now manufacturing their Delta chassis from a magnesium alloy. It's one of the lightest chassis: the ensemble weighs 2 kg, including the cage and carbon stays. A complete machine with a Nitro 200 motor (190 cc, 28 HP, made by Air Concept) only weighs 19 kg.

Las Candelas, is a bit like the paramotor equivalent to the Coupe Icare.



Photo: Mika Regnier/ITV





One of the wings that created a buzz at Las Candelas: the Dudek Warp, whose speed range is advertised as 29 km/h to 80 km/h... This competition wing is supposed to combine the characteristics of the Hadron XX and the Snake XX.  
<https://www.dudek.eu/en/products/warp.html>



The manufacturer PAP celebrates their thirtieth anniversary. For their chassis, they are putting a lot of emphasis on 'Tinox': lightweight Titanium for the cage and stainless steel to give a robust chassis foot.







Photo: Mika Regnier/ITV

In the paramotor world over the last few years, a Finnish pilot has been on the top spot: 33 year old Helina Nieminen, who lives in the little town of Alavus in the centre of Finland. Here, she introduces herself:

My sponsors :  
 Skyengines, ITV, Hélix, Nvolo  
 Facebook: [Helina.Nieminen](#).  
 Instagram: [Finnishparaglidinggirl](#)

Above, at Las Candelas

Right: during the 2018 Coupe Icare at the stand of Helix, the German propeller manufacturer who sponsored her.

Photo: Sascha Burkhardt



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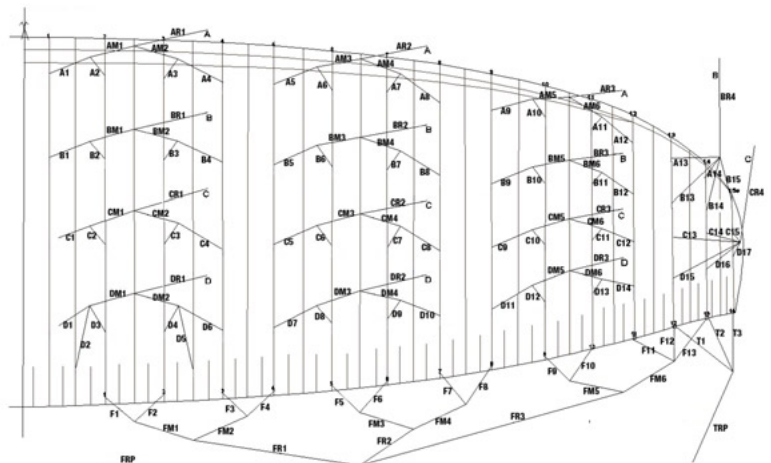


The new ITV Piper could be seen everywhere in the countryside around Las Candelas. A wing with a maximum speed of more than 70 km/h. ITV's goal was to conceive an 'all-purpose wing designed for performance.' This wing's stability in turbulence comes, amongst other things, from a new internal structure and a SharkNose profile. The inflation is made easier by using a lighter fabric on the lower surface. voler.info will be doing a quick test.

**ITV**


**ADMINISTRATION:** France  
**DESIGN:** France  
**MANUFACTURE:** Sri Lanka

<b>PIPER</b> TECHNICAL DATA					
<b>MANUFACTURER:</b> ITV - Web: <a href="http://www.itv-wings.com/fr/voiles-et-accessoires-itv-paramontes/voiles-de-paramoteur-itv/piper-itv-paramoteur.html">www.itv-wings.com/fr/voiles-et-accessoires-itv-paramontes/voiles-de-paramoteur-itv/piper-itv-paramoteur.html</a>					
<b>DATE</b>	2019	2019	2019	2019	2019
<b>SIZE</b>	18	20	22.5	25	27.5
<b>CELLS</b>	60	60	60	60	60
<b>FLAT SURFACE AREA [m²]</b>	18	20	22.5	25	27.5
<b>FLAT WINGSPAN [m²]</b>	9.89	10.40	11.10	11.69	12.35
<b>FLAT ASPECT RATIO</b>	5.45	5.45	5.45	5.45	5.45
<b>ALL UP WEIGHT [kg]</b>	-	65-100	80-130	90-140	110-160
<b>WEIGHT OF THE WING [kg]</b>	4.7	5	5.4	5.7	6.2
<b>FREE FLIGHT CERTIFICATION</b>	DGAC	DGAC	DGAC	DGAC	DGAC
<b>Materials:</b> Tissu Dominico					







▶ ⏮ 🔊 0:36 / 1:25



A nice video from ITV: the Piper in skimming flight in France.



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Accessoires



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– Gin Seok Song, Gin Gliders



[www.gingliders.com](http://www.gingliders.com)





## THERMIKMESSE 2019

### SEEN // HEARD @ THERMIK 2019

In mid-January 2019, the Thermikmesse trade show took place in Stuttgart in Germany. After moving location from Sindelfingen, this was the second time that the trade show took place over two days in this town, as part of the "Caravan Motor Touristik" exhibition, open to the general public.

This format wasn't to all the manufacturer's liking and some even pulled out at the last minute. There were, however, lots of visitors and, contrary to a concern of the exhibitors the previous year, the non-pilot visitors weren't really in the majority.

In this edition of free.info, all the information collected by our German correspondent, Stefan Ungemach, is thus indicated and written by him in English.

by S.U.

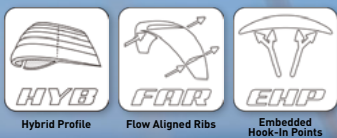


A few impressions of the 2019 exhibition from the organiser's website. In 2020, following the wishes of numerous exhibitors, the Thermikmesse trade show will take place, once again, over a single day and in a separate exhibition hall.



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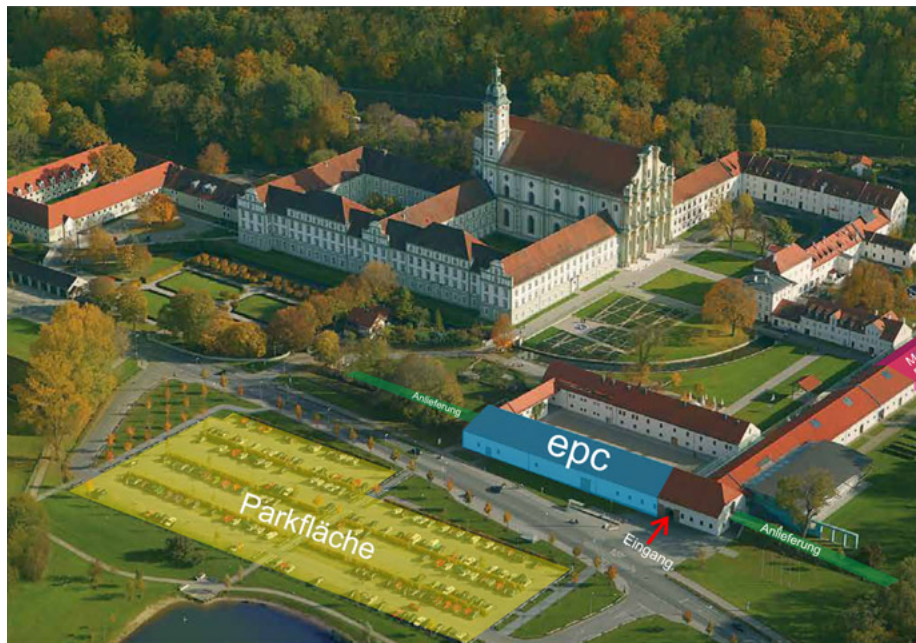
APCO

Photo using APCO camera magnetic mount positioned on the wing.

# EPC 2019

SEEN // HEARD @ THERMIK 2019

In November 2019, the first edition of the EPC (European paragliding convention), will take place. It's a trade show specially orientated towards paragliding professionals, organised by the Secretary of the PMA, Guido Reusch.  
<http://www.epc.aero>







## MAESTRO

The Maestro is the high-end EN B model. After having more or less filled the A and B categories, Phi have started to look at the more demanding classes. A two-liner is also anticipated.

The legendary Nova Mentor 3 was the last high-end EN B, designed by Hannes, six years ago. With the Maestro, he hopes to provoke a similar culture shock in this class...

A lightweight version of the Maestro will take part in the X-Alps this year. An EN B three-liner amongst the EN D two-liners...



ADMINISTRATION: Austria  
DESIGN: Austria  
MANUFACTURE: Sri Lanka Aero Dynamics

## SEEN // HEARD @ THERMIK 2019

The Maestro with 60/120 cells is certified in sizes 19 to 23.

Also certified: the Viola in all sizes except 12. The 16 is even an EN A, weighing 2.5 kg and carrying 75 kg...

 Stefan Ungemach







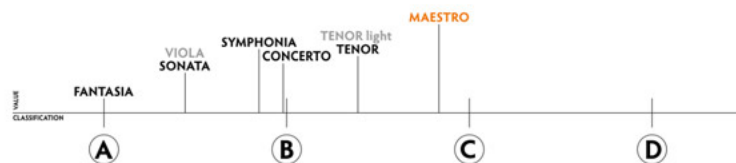
## MAESTRO

### TECHNICAL DATA

**MANUFACTURER: PHI**

Web: <https://phi-air.com/>

DATE	2019	2019	2019	2019	2019	2019
SIZE (@PHI ALWAYS PROJECTED)	XS 17	S 19	M 21	ML 22	L 23	XL 25
CELLS	60/120	60/120	60/120	60/120	60/120	60/120
FLAT SURFACE AREA [m <sup>2</sup> ]	20.33	22.56	24.91	26.1	27.27	29.68
FLAT WINGSPAN [m]	10.63	11.2	11.77	12.05	12.31	12.85
FLAT ASPECT RATIO	5.56	5.56	5.56	5.56	5.56	5.56
ALL UP WEIGHT [kg]	50-75	65-85	75-95	83-103	90-110	105-130
EXTENDED ALL UP WEIGHT [KG]	-	85-90	95-100	103-108	110-115	130-135
CERTIFIED ALL UP WEIGHT [KG]	50-75	65-90	75-100	83-108	110-115	105-135
WEIGHT OF THE WING [kg]	4	4.3	4.6	4.75	4.9	5.2
FREE FLIGHT CERTIFICATION	(B)	B	B	B	B	B
FF CERTIFICATION LAB	(DHV)	DHV	DHV	DHV	DHV	DHV
PPG CERTIFICATION	planned	planned	planned	planned	planned	planned
PRICE [€]	4350	4350	4350	4350	4350	4350
Fabric: Porcher Skytex 32/27						





**SUPAIR**

 ADMINISTRATION: France  
 CONCEPTION: France  
 PRODUCTION: Europe

**SEEN // HEARD @**  **THERMIK 2019**

SupAir has improved the acro harness Acro 4 in many details. The shoulder straps are no longer running straight to the legs but are now sewed directly to the chest strap, thus adding stability. The rescue compartment is sealed better against sand and debris, and the size of the back compartment is variable as well.

[www.supair.com](http://www.supair.com)


Kein Durchläufer, sondern Vernähung



Vergrößerbare Staufach



A – Bumpair 17 cm  
 B1 – Retterfach Rücken  
 B2 – Retterfach unterm Sitz für steuerbare Rettung  
 C – Staufach





# NOVA

SEEN // HEARD @  THERMIK 2019

The Mentor 6 is the new EN B+ from Nova. Nova have integrated numerous new details, some of which come from more advanced wings. It is slightly lighter. A band which crosses the mini-ribs at the trailing edge (visible on the photo opposite) allows the brakes to be applied with a lot less creasing.

 by Stefan Ungemach.







In accelerated flight, when flying using the rear risers, the Bs are also shortened.



Details of the Mentor 6. The fabric is mainly Dominico.



The Nova-style SharkNose!

MENTOR 6					
MANUFACTURER DATA					
MANUFACTURER: NOVA					
Website: <a href="https://www.nova.eu/">https://www.nova.eu/</a>					
YEAR	2019	2019	2019	2019	2019
SIZE	XXS	XS	S	M	L
CELLS	59	59	59	59	59
FLATSURFACE (M²)	21.5	23.8	26.2	28.5	30.9
FLATWINGSPAN (M)	10.8	11.4	11.9	12.4	13
FLAT ASPECT RATIO	5.43	5.43	5.43	5.43	5.43
ALL UP WEIGHT (KG)	60-80	70-90	80-100	90-110	100-130
WEIGHT OF THE WING (KG)	3.45	4.8	5.05	5.3	5.55
CERTIFICATION	EN/LTF B	EN/LTF B	EN/LTF B	EN/LTF B	EN/LTF B
TESTING HOUSE	DHV	DHV	DHV	DHV	DHV
MOTOR CERTIFICATION	planned	planned	planned	planned	planned
PRICE [€]	4100	4100	4100	4100	4100
<b>Fabric</b>					
Leading edge: Dominico 30D, 41 g/m²					
Upper surface: Dominico 20D, 33 g/m²					





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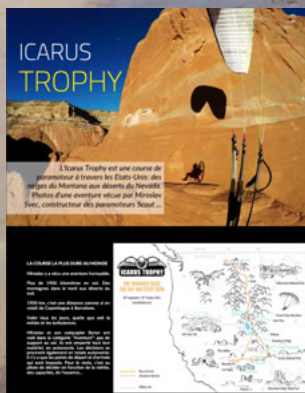
Miroslav Svec, owner of the company Scout, has launched a new project: he wants to use the 'Wingman' fund to support and sponsor paramotoring adventures, both large and small.

All you have to do is submit the project (the next deadline is the end of March 2019). No matter what the project, no matter the make of paramotor used, it just has to be a media friendly adventure on a paramotor.

Wingman are happy to pay up to 50% of the costs, amongst other things, for the video footage shot during the adventure trip.

For further details:  
<https://adventurewingman.org/>

Miroslav Svec recounted one  
of his own adventures in this  
article in 2016.





  
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Photo shot some years ago in another situation

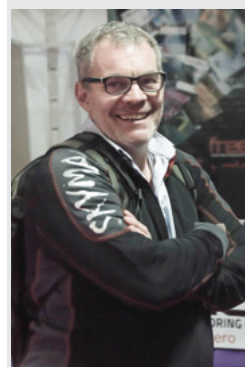
Photo : Gudrun Öchsl

## PMA HARNESS EFFECT TEST

**T**he result was known beforehand, which all participants assumed. But it seemed necessary to re-verify old results. In short, the effect of different harnesses in different settings on comparatively moderate gliders was to be investigated. This was mainly about the harnesses and less about the gliders. The unanimous opinion: *"As soon as the harness is different from the one used for the type testing, the reactions of the paraglider will also change"*. In the meantime, many harnesses have arrived in the low-B glider range, which 10 years ago were exclusively reserved for the higher classes. With and without seat board, Hike & Fly with single leg loops and middle lying position with Leg Bag to name just a few.

So far so good - but to what extent will these features cause a changed glider reaction? A moderate "low-B" will become a "high-end-B" or even an "EN-C". In the public perception the opinion prevails that a glider must be seen independently of the harness. If possible, the glider must always show the same reaction with all possible harnesses, and this also with every pilot.

## TRIBUNE



**Guido Reusch**

**Secretary of The Paragliding Manufacturers Association, the PMA, since September 2016. Former director of the EAPR test laboratory.**

The PMA brings together numerous manufacturers and suppliers from the paragliding world. It isn't just involved politically in the regulatory framework of our sport, but also technically and practically from a safety point of view.

From now on, in our magazine, Guido Reusch will be regularly explaining various technical and regulatory aspects.

Some subjects which are a bit dry do actually affect us a lot more than you would think at first glance...

The views in this column don't necessarily reflect the opinion of the editor.

<https://www.facebook.com/87730pma>





# Efficient Performance

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[www.advance.ch/iota](http://www.advance.ch/iota)

# ADVANCE IOTA<sup>2</sup>

Picture: Felix Wölk | Location: Oman

However, as soon as deviations arise, the pilot does not first question the combination self-critically, but reflexively takes the manufacturer and the testing authority into account. The manufacturer is directly and often accused of making incorrect statements about the glider in anonymous forums. His statements about the product are called into question and his reputation is often severely damaged.

It is important to work against this misconception of the immutability of the classification of a paraglider. That was and is the aim of the "PMA Harness Effect Test".

On the legal basis there is only "the paraglider system". A single test in sub-areas such as harness, rescue or paraglider is not provided for in aviation law. What gives us the freedom of unlimited combinations on the one hand, is exactly the problem on the other!

Not everything always fits together with everything. Begun from rescues in certain harnesses and even harnesses with certain paragliders. For the rescues there is in combination with the harnesses at least one volume specification, for the combination of the paragliders with the harnesses there are no clues.

Now to the results of the first part of the PMA Harness Effect Test: First of all, I would like to thank the manufacturers who supported the project. The first premise was that no single brand should be damaged, regardless of what came out afterwards. For this reason we keep the names and manufacturers of the paragliders and harnesses anonymous.

Four paragliders were selected. Three of them were Low-B gliders, once it was a very light A glider. This was combined with four very popular harnesses. A real race harness was intentionally omitted, since such a harness is never used in direct combination with the class of gliders to be tested.

The tests took place on two full days at Lake Garda under EN 926-2 conditions. In total, more than forty individual tests were carried out.

Very experienced pilots were approached who could give objective information in the assessment of changes of a manoeuvre.

The test pilots were in the weight range of the paragliders and the harnesses were carefully adjusted to the respective body dimensions.



The following manoeuvres were selected in accordance with EN 926-2:2016:

- symmetrical front collaps
- asymmetrical collaps (75%), - deep spiral

These manoeuvres were first assessed in as neutral an upright position as possible with the chest strap distance prescribed by EN 926-2. Then the chest strap was opened completely and finally the harness was brought into the maximum "lying" position of the adjustment possibilities.

All configurations were evaluated individually in the selected manoeuvres! Initially, the basic classification was confirmed for all paragliders. Even if harnesses without seat board and with higher suspension have already behaved noticeably different than the classification had shown. But there was still no leap in classification - EN-B remained EN-B.

However, the more the chest strap was opened, the more significant the differences were; even the EN-A glider became a much more demanding glider - EN-B in any case.

If the back adjustment was then brought to the maximum position of the reclining position, the results of the tests were sometimes drastic. A class leap was expected - from EN-B to EN-C.

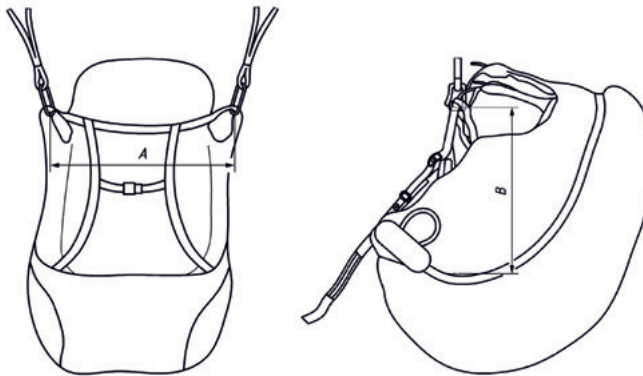
But it came partly more drastically - some combinations had to be EN-D classified, which means nothing else than that the pilot had to actively intervene to finish the manoeuvre.

It does not produce a uniform line - it affects more or less all harnesses with all paragliders - sometimes more, sometimes less - but always clearly noticeable! Only very few pilots are allowed to operate their paraglider in the EN harness setting - everyone else is clearly shown that there can be significant differences in the reactions of the paraglider if the initial position of the harness settings is changed. This mainly concerns a further chest strap distance and a lower lying position, or the combination of both.

The classification is only an excerpt of the possible reactions - and not an absolute constant in practical flight operations!

Guido Reusch, PMA

## STANDARD VALUES



TWF (total weight in flight)	< 80 kg	80 kg-100 kg	> 100 kg
Width (measurement A)	(40 ± 2) cm	(44 ± 2) cm	(48 ± 2) cm
Height (measurement B)	(40 ± 1) cm	(42 ± 1) cm	(44 ± 1) cm

An older model (not participating in these tests) in test flight

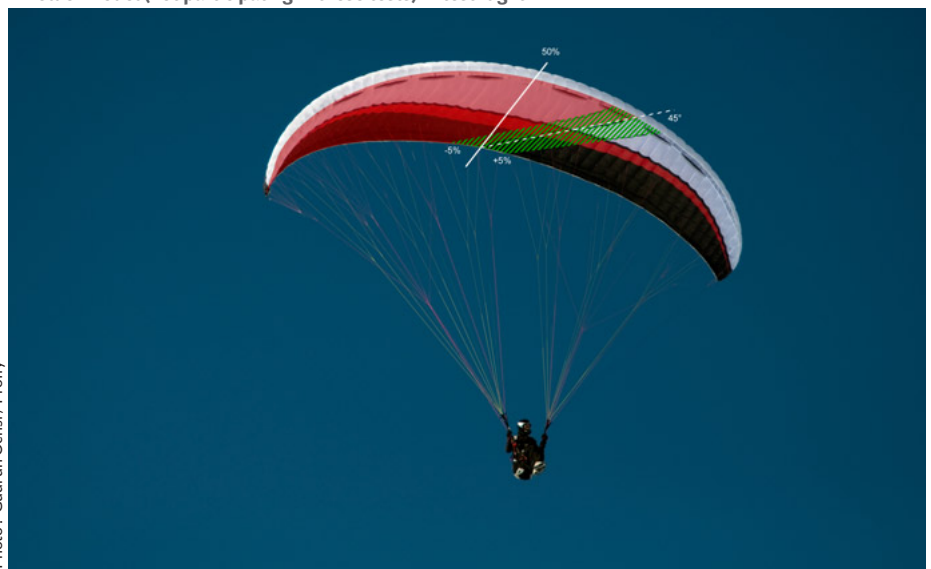


Photo : Gudrun Öchsli / Profly



World of XC paragliding





*Especially when it comes to tandem hike and fly, Ozone couldn't not react when faced with these two ultralight single surface tandems. The Wisp, a classic 38 m<sup>2</sup>, double surface wing, weighs barely 4.4 kg in the lightweight version and 4.7 kg in the 'normal' version.*

### Our comparison of the Skyman Sir Edmund Bi with the Niviuk Bi Skin 2 P

The specifications were clearly based on applying the record light weight of the 10-gram London version. The new version weighs less than 3 g (2.83 g on our scales), that's a record! And, like the old version, it has just come out with chested lines that we briefly tested. There will be an even lighter version, with unhealed lines, in the near future. It's a greater 2.69 g, incredible for a tandem. However, compared with the 10-gram version, it's a bit more of a protective line against the "old" version.

exist to bring this wing up. At the same time, the way the Nevada Skin comes up is already intricate, there is hardly any need to do better.

On the other hand, the clean line layout on the Sir Edmund (pole or tendon) can be an advantage in wild mountain take-offs. For both landings, these also are not essential to them need to pay attention, this line of work really comes up all by itself given the slightest push on the reins. You need to be very careful not to lead the wing about your head, but to let it follow the head and be ready. That may seem caricatured, but it's the truth. On a windy take-off, during the last moments of preparation, it's best to keep the wings close to the body with the hands, or indeed the brake lines between your teeth! On the other hand, a rapid controlled stop on finishes fairly properly, the wings are raised a couple of inches, the Sir Edmund with short lines, you would expect to be violently pulled on the ground, but that isn't the case, the wings position themselves nicely and relax, and the tail and neck are not pulled.





The ease with which it takes off makes it feel almost like a single skin. It comes up all by itself.

In the single skins, the low surface area is compensated for by the profile's lift coefficient, which is higher. This is why, with these wings, it is sometimes possible to use weak thermals, despite their small surface area. On the other hand, they are not as fast.

The size of the double surface tandem Wisp is close to that of a heavier tandem. However, the Wisp isn't just light; it also folds up to the same size as many standard solo wings. Apparently, the designers have worked out how to optimise the internal structure, amongst other things. The Wisp is based on the lightweight EN A Ozone Jomo, itself a light weight version of the EN A Mojo. Therefore, it's a compact wing with 40 cells and an aspect ratio of 4.9, just like the Jomo.

#### PREPARATION

For a tandem, this wing is very easy to set up. The pretty reasonable surface area as well as the unsheathed lines (Edelrid Magix Pro 8000U), which are uniform, simple and fluid, make preparation easy on any take-off.

Lightweight fabric, mainly Skytex 27.





### INFLATION.

Inflating this lightweight wing is disconcertingly easy. Its lightweight and monoblock profile are the main factors. It comes up very easily and progressively without any major problems. Inflating it is almost comparable to that of a single skin. However, be careful: as with the single skins, in strong wind, the wing can inflate all by itself whilst setting up. Therefore, you need to keep hold of the brakes once it is spread out.

On the other hand, it comes up nice and regularly, even in strong wind and it doesn't pull much if the pilot properly controls the speed it comes up.

### LOAD TAKE UP

The load take-up is perfectly normal, slightly better than for typical single skins. The trimmers allow it to be adapted to the weight and the conditions on take-off.

### IN FLIGHT

The Wisp is a monobloc wing which hardly deforms, if at all, across the wing. It is very compact. This characteristic is an added strength in thermals because the wing isn't bothered much by irregularities in the thermals, making the turns very homogenous and uniform. In addition, it has lots of energy and is very reactive through the controls. This mix gives a wing, which is very efficient and easy in thermals, even compared to bigger tandems. It is very precise and nice to put into turns and it's a real toy in thermals.

### BEHAVIOUR IN TURBULENCE

This is one of this tandem's strong points. The resistance of this monobloc wing to collapses in turbulence is extremely high. The Wisp is impressively solid, particularly at the wing tips, as long as it is flown in the middle or above of the weight range. In this case, you really have to be in very strong turbulence before you'll have a wing tip go or a collapse. At the low end of the weight range, the wing tips can sometimes collapse a bit, but obviously without any consequence. This wing's great behaviour in turbulence is, without a doubt, partially due to its low weight and therefore its limited inertia, as is the case with all lightweight wings. The main disadvantage of wings which are very solid is often the loss of feedback from the air mass. However, with the Wisp, the feeling remains very good.

### LOW SPEEDS

Very good tolerance and feedback at low speed. The brake travel isn't extraordinary, but the force on the brakes is clearly perceptible.





A compact, monobloc,  
reassuring, comfortable wing.

### EARS

Due to the solidity of the wing tips, putting in ears on the Wisp is very physical. Lots of strength is required to be able to pull in the ears. Once they are in, this force is no longer necessary. On the other hand, the risers on the Wisp are longer than those on a classic tandem, you therefore have to pull on the ears from a lot higher up, which isn't always easy to do. It's worth noting that we tested the Wisp with the classic risers and not with the light lightweight Dyneema ones.

### FLARING AND LANDING.

The flare is excellent and obvious on this tandem and the landing is simple and easy.

### RESULTS/OPINION

A really nice product by Ozone, a lightweight wing with the same advantages and performance as a classic tandem. A very interesting alternative to the single skin tandems, by being just a little bit heavier.

A possible limitation: the lightweight fabric and the unsheathed lines make it a wing which is perhaps slightly less suitable for intensive everyday use. Yet the other characteristics make it a very nice wing even for professional use. It's a tandem which is perfectly adapted for amateur tandem pilots on a classic site and also for hike and fly.

<https://www.flyozone.com/paragliders/es/products/gliders/wisp/info/>

Photo: Sascha Burkhardt



## THE OPINION OF...

**RENAUD FRANÇOIS**

Professional tandem pilot and co-owner of the school Vol'aime near Font Romeu in the Pyrenees.



*Laying out this extra light tandem is straightforward, as long as you take care when folding it to coil up the lines in a figure of eight, like a climbing rope. Thanks to its light weight, taking off is very good: it scoops well, it comes up homogenously and the wing stops at the right angle of attack with a rapid load take up.*

*When flying in calm conditions, the wing is stable and it turns well. In thermals, it has very little inertia so it can get a good kick in such conditions.*

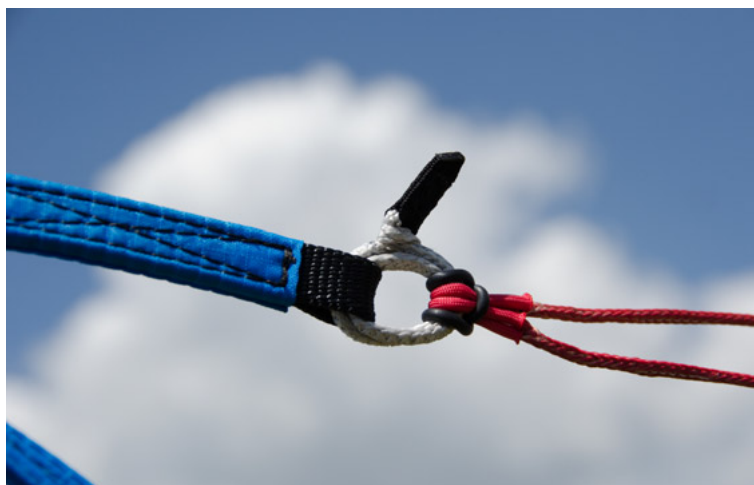
*Therefore, quite rightly, it gives a lot of feedback. Its compact and monobloc side gives it good glide and its turn, combining roll and yaw, makes it efficient to use.*

*Lastly, it has a good quality flare, which makes landing very easy.*

*In summary, a great extra-light tandem which has good inflation, turns nicely, as well as being easy to land, ideal for taking a partner or friends flying in the mountains...*



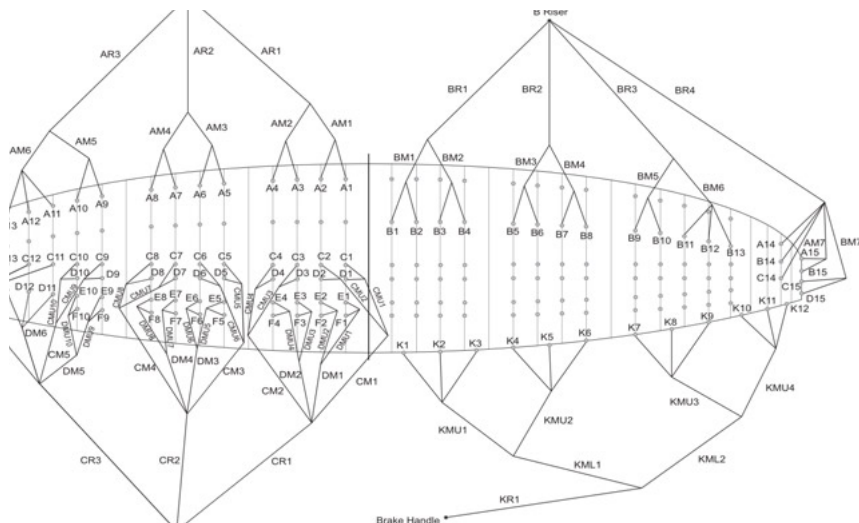




Softlink connectors, even on the strap riser version. Protection against movement of the loops provided by a rubber ring could limit wear from friction.



Strap risers. There is a Dyneema version with rudimentary trimmers, giving a further gain of 300g.



WISP	
MANUFACTURER DATA	
Manufacturer: Ozone <a href="https://flyozone.com/paragliders/en/products/gliders/wisp/info/">https://flyozone.com/paragliders/en/products/gliders/wisp/info/</a>	
YEAR	2018
SIZE	38
CELLS	40
SURFACE FLAT [M <sup>2</sup> ]	37.8
WINGSPAN FLAT [M]	13.6
FLAT ASPECT RATIO	4.9
ALL UP WEIGHT [KG]	110-180
WEIGHT OF THE WING [KG]	4,4* / 4,7**
CERTIFICATION	EN/LTF B
TESTING HOUSE	AIR TRQ 6/18
PRICE [€]	4680
<b>Fabric:</b> Upper surface: Dominico N20D / Skytex 27g Classic Lower surface: Skytex 27g Classic Cell walls: Skytex 27g Hard Lines: Edelrid 8000U Riser *straps/**Dyneema	



# POLINI



ADMINISTRATION: Italy  
 DESIGN: Italy  
 MANUFACTURE: Italy

## CHAMPION BRAND.

Polini keeps its position at the top of world competitions; see the following page.

Although their victories have mainly been with the Thor 250, their less powerful machines have been noticeably improved.

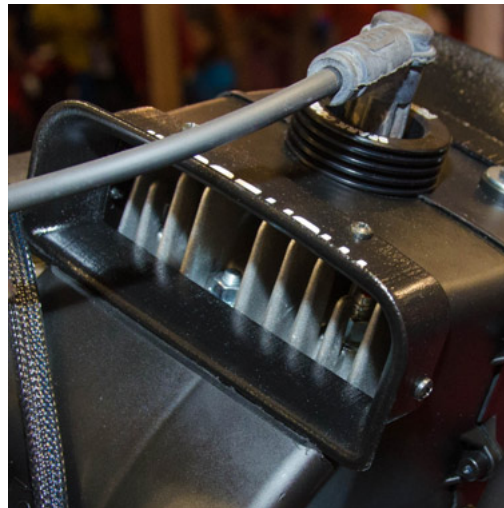
Both the Thor 190 and the 200 are sold as HF (High Flow) versions, with a rethink of the air-cooling flow. The spark plug is also equipped with an extra cooling system.

The Cylinder Head Temperature will thus be lowered by 50°C, and the Exhaust Gas Temperature by 100°C, which is enormous.

## WHO'S WHO?

Iuri Polini is part of the founding family of this Italian group, which initially came from motor car racing.

Photo: Sascha Burkhardt



An extra opening at the front and fins for the spark plug.



The Thor 190 HF from behind, shown here with a titanium exhaust.

Polini Thor 190 HF



Polini Thor 200 HF





# CHAMPIONSHIP

## WORLD CHAMPION

During the World Championship in Egypt at the beginning of November, the first places went to Polini Thor.

In the foot-launched classification PF1 for example:

- 1 Alexandre Mateos, Thor 250 (FRA)
- 2 Nicolas Aubert, Thor 250 (FRA)
- 3 Halama Lubos, Thor 250 (CZE)

Alexandre's wife, Marie Mateos, was the first woman in PF1, also flying a Thor 250.

Polini Thor 250: 36 HP



A Thor 250 taking off.

World Champion Alex Mateos on the ground with his MacFly chassis and in action (right).





# NAVITER



ADMINISTRATION: Slovénie  
 CONCEPTION: Slovénie  
 FABRICATION: Slovénie

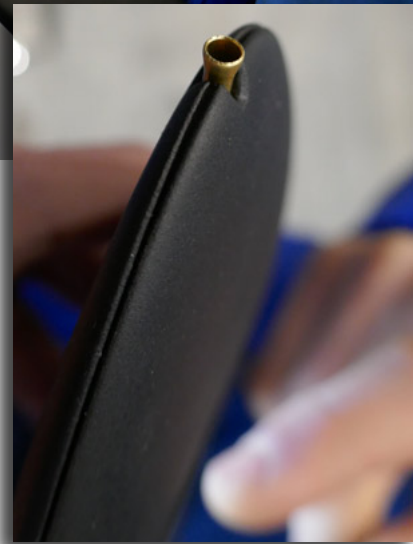
## SEEN // HEARD @ THERMIK 2019

Naviter has the Blade for hanggliders, including a seamlessly integrated Oudie 4 and a pitot tube option for which the software has already been adapted. The totally revamped SeeYou-Cloud also adds new high resolution maps, which can be used onto Oudie and Hyper instruments – as long as there is a current subscription for 49€ per year plus VAT, which includes more value like a SeeYou license and the option of loading live weather information into Oudie devices. The maps clearly focus on pilots: you find a highly detailed terrain with even the smallest hiking paths, but the amount of cities and roads is limited. The impressive 3D map material can also be accessed online for flight planning and replay, better than Doarama and with a free account. A small problem: like with XContest all the newest map features are currently only running under Chrome, not Firefox.

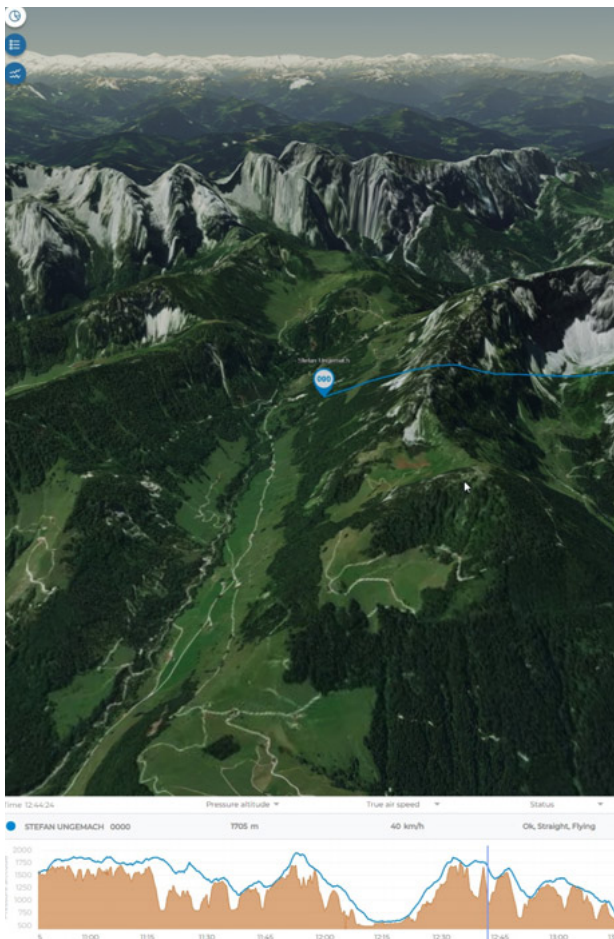
written by Stefan Ungemach.



Naviter has the Blade for hanggliders, including a seamlessly integrated Oudie 4 and a pitot tube option for which the software has already been adapted.



The impressive 3D map material can also be accessed online for flight planning and replay





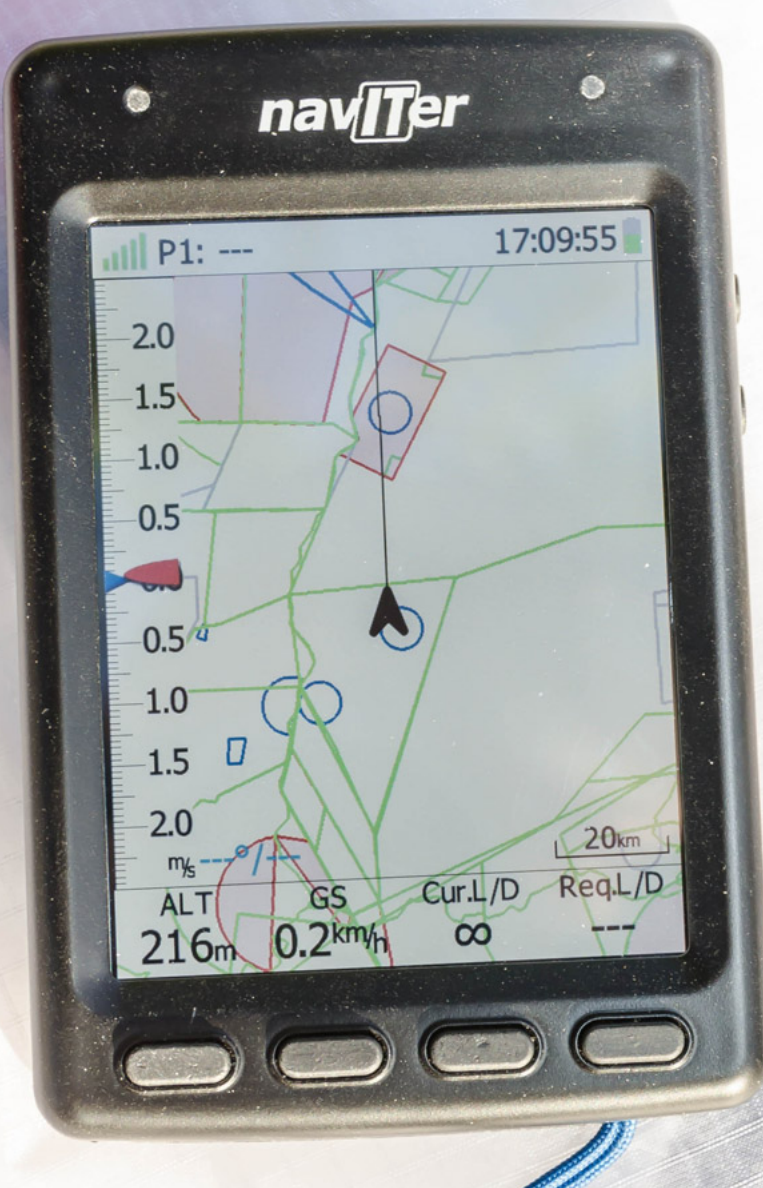


Photo: Sascha Burkhardt

Klein, aber sehr fein...

## REVIEW NAVITER HYPER

*This is what adventurers and migratory birds have been waiting for: with the Hyper, Naviter is building a pocket-sized quality vario with colour maps.*

English text by Stefan Ungemach

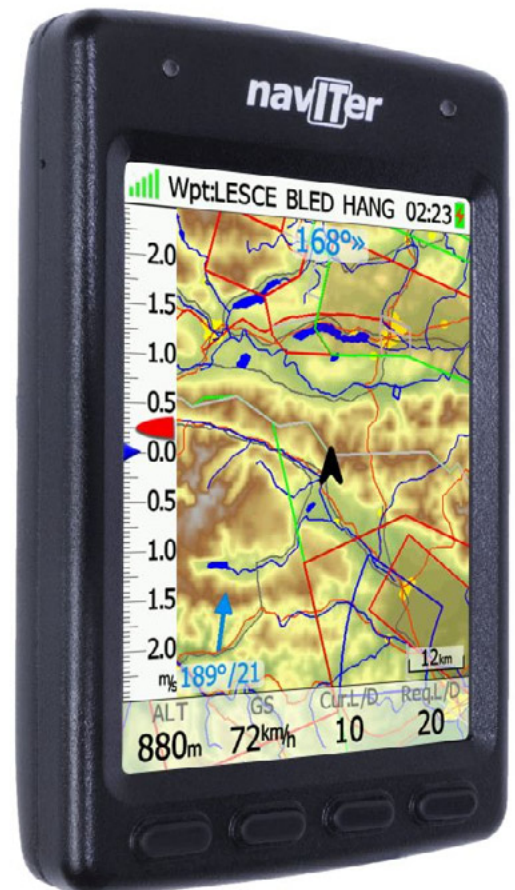


Photo: Naviter



! "#\$ % & ' ( ) \* ' + , - . / #

With ultra-light equipment by SKYMAN  
Like the unique single skin Sir Edmund RACE,  
EN /LTF B - 1,75 kg (at size 17)



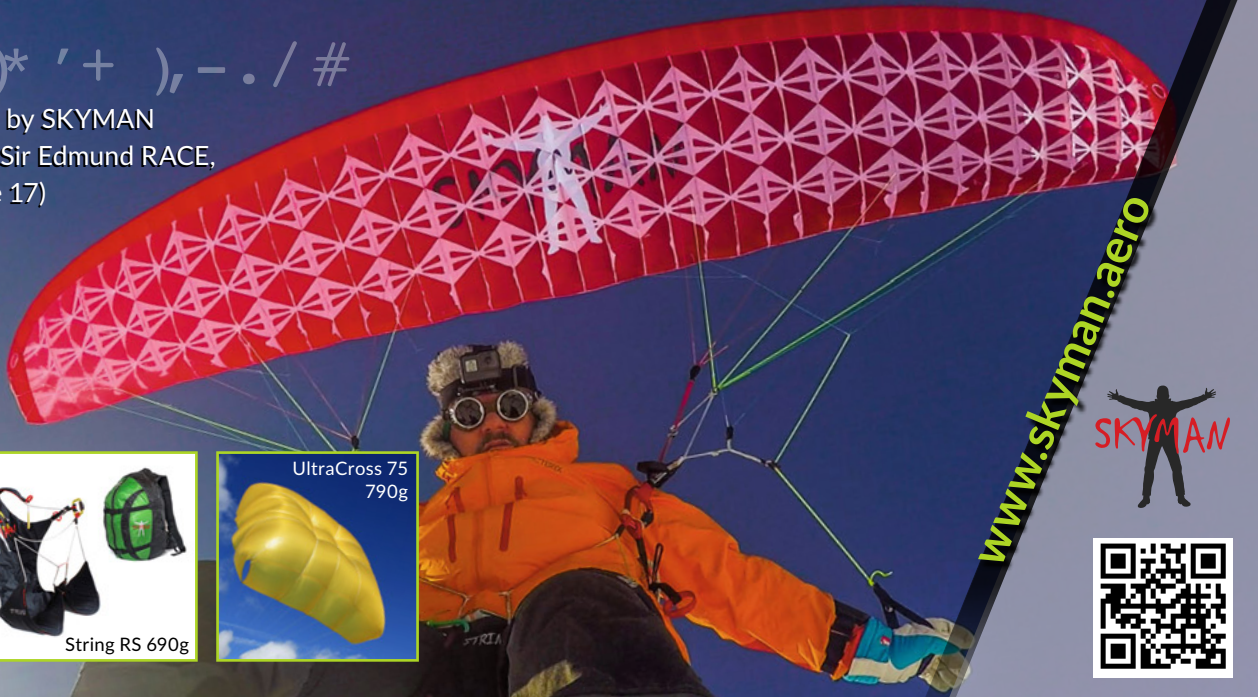
X-Alps 2,3kg



String RS 690g



UltraCross 75  
790g



www.skyman.aero



**135**g, 3.42" display,  
70x107x18mm - what  
sounds like a compact  
mobile phone turns out to be a solid GPS  
flight computer with a fine vario, inertial  
system and bright TFT colour screen.

The Hyper is the ideal travel companion  
not only for technology enthusiasts: just  
pull it out of your pocket, switch it on and  
launch. Since the Hyper comes out-of-the-  
box with worldwide terrain maps and airs-  
paces, and map content such as cities,  
waterways and roads is available online in  
one single file per continent, it is as easy as  
that.

A robust case with 6 hardware buttons  
(plus main switch) reveals outdoor genes:  
the jewel comes with a storage box, Velcro  
strips, USB charger and a safety cord. An  
optional protective silicone case with Vel-  
cro in three colours is available as an op-  
tion for 25€ as well.

Photo : Sascha Burkhardt





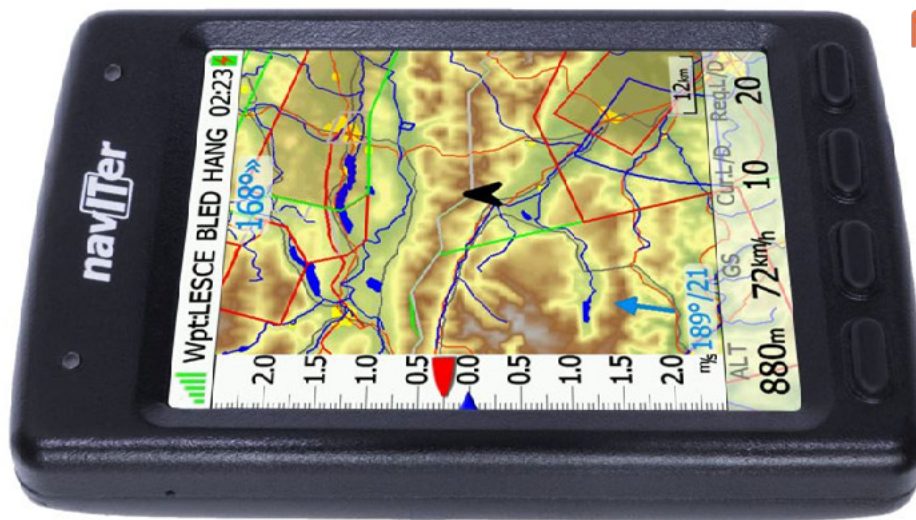


Photo : Naviter

### CONNECTIONS

The 2.900mAh battery is charged within 2 hours by micro USB, and the device runs in platform-independent mass storage mode. Wifi and Bluetooth are on board and allow flights to be sent by e-mail. The future will see - as in the Oudie - a BT connection to the Android app "Oudie Live" which can upload flights to the SeeYou Cloud and a connect a flight radar to the OGN-Network (FLARM).

The bright touch display reflects, and there are still no suitable protective films which should change soon. However it is very easy to read, the resolution of 480x640 even extending the one of its big brother Oudie. A Finn mount can be used to clip the lightweight device to the risers as well.

### CONTROL

Touch control is limited to the essentials: horizontal swipes switch pages, and touching a NavBox changes its content (like with the Volirium). All other in-flight interactions (airspace warnings, zoom, volume) are intuitively controlled by hardware buttons..



Photo : Sascha Burkhardt



Photo : Sascha Burkhardt



## The five-sided parachute with high pendular stability

- \_ oscillation damping
- \_ fast opening
- \_ slow to descend
- \_ water-resistant materials
- \_ uncomplicated packing

Available in 3 sizes: 100 / 120 / 145

[www.nova.eu/pentagon](http://www.nova.eu/pentagon)

NOVA

### DISPLAY PAGES

The Hyper has three flight pages and one settings page with two subordinate information screens. The main page contains a compass rose with direction indicators for flight path, waypoint destination and last climb, plus a wind pointer with speed display. In addition there is a flight track coloured according to climb values so that the page also acts as an automatically triggered centering aid. It is completed by two large and four small NavBoxes, freely assignable from a stock of 21 values.

The other two pages contain the same high-quality and centrally configurable vector map with scale, wind pointer plus 4 freely configurable info fields at the bottom. Zoom can be set separately for each map, but the maps also show the drawback of the sexy form factor: its relatively limited computing power and reading frequency prevent the rotation of map content. In other words: course aligned maps are restricted to flight track and airspace, but the orientation of the main page can be set independently, so that full featured maps work with a course-relative compass. However, topographic data like town names are not shown on the map yet.

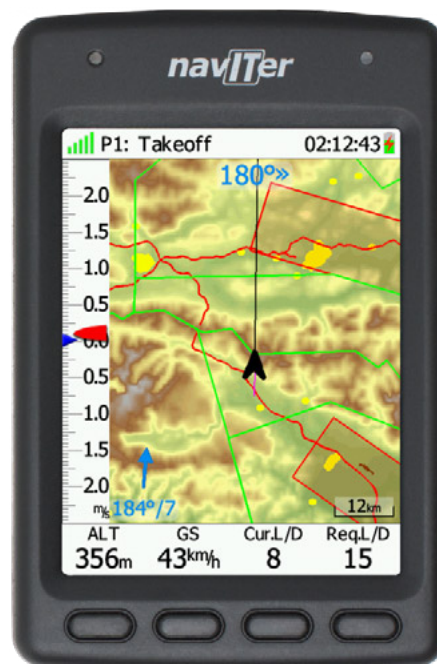


Photo : Naviter

The subordinate screens of the main page show system and gps status. In addition some status fields (GPS, WiFi, current waypoint, local time and remaining battery life) are permanently shown on the top of each page. The local time is supposed to be replaced by the flight time soon, thus saving a field.

### VARIO AND SENSORS

During flight the vario function is supported by the inertial system (acceleration and magnetic field sensor), but it does not include a tilt compensated magnetic compass that also works on the ground. There are only very few options to configure the vario behaviour (multi-stage filter, climb and sink threshold). The acoustics themselves cannot be changed.

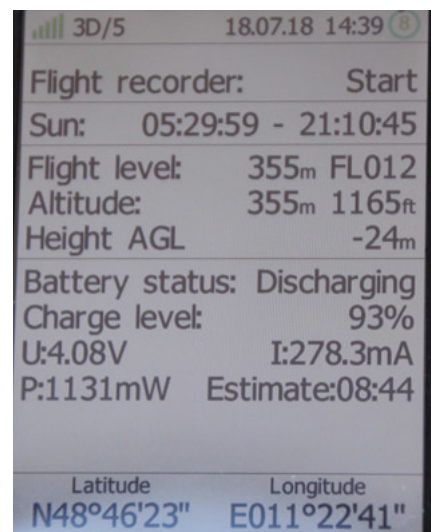


Photo : Stefan Ungemach





## NAVIGATION

Airspace approach is indicated in all three dimensions: the according transparent message is visible on all sides of the flight and can be controlled with the hardware keys. Navigation is easy as well: at any time a goto menu with waypoints (sorted by distance), takeoff, waypoint creation and route usage opens at any time via the right hardware key. A route can be defined on the device, but the Hyper allows only one at a time, thus deleting the existing route when editing a new one.

The XC enthusiast benefits from a FAI assistant and OLC optimization, but the small device particularly appeals to the H&F fraction: a separate

mode records the entire hike and creates additional IGCs for the flying parts - though the internal maps are too rough for hike support. For users with an actau SeeYou Cloud subscription alternative super-high resolution maps can be loaded on the Hyper, too.

## SUMMARY

In summary, the Hyper can probably be described as the best travel and alpinist vario at the moment: the practical indicators, worldwide maps and airspaces and a sturdy hardware provide the basic equipment for excursions into the unknown.

<https://www.naviter.com/oudie/>

Air Spaces



Defining a route

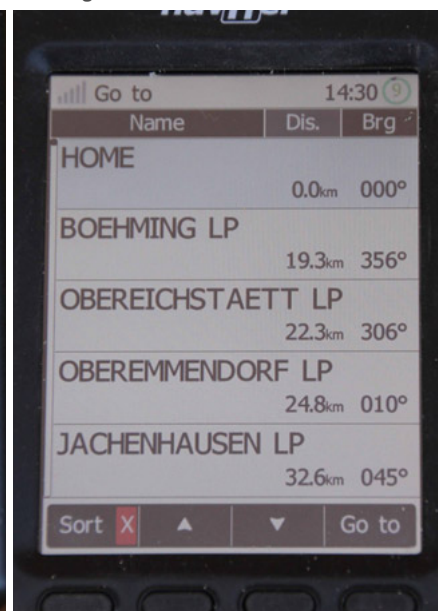


Photo : Stefan Ungemach

Protection case (3 colors available)



Photo : Naviter





NIVIUK.COM > PROGRESSION

EN/LTF B

# HOOK 5

## Progress in every level

The classic Niviuk's Hook is reinvented in a fifth version, offering maximum accessibility and safety along with the highest performance in its category. A glider designed to leave your usual flight routine and accompany you on new routes.

*Also available in its light version HOOK 5 P (EN/LTF A+)*

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[instagram.com/Niviukparagliders](https://instagram.com/Niviukparagliders)



# AGERA RS

... PERFORMANCE ELEVATED

The new AGERA RS blows up the boundaries and takes the EN-C class to a new level of performance. It shows the handling, feel and performance of a two-liner wing, with the safety and stability of the EN-C class. Featuring RAST.

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ROCK SOLID RAST  
FLIGHT WITH

SWING



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MITO | ARCUS RS | ARCUS RS LITE | NYOS RS | **AGERA RS** | TWIN RS | APUS RS | TRINITY RS | MIRAGE RS | SPITFIRE 2

## LATEST

### PXP FOR SALE

José Navarro, head of PXP Paramotores in Spain, needs to sell his brand for health reasons. For more information:

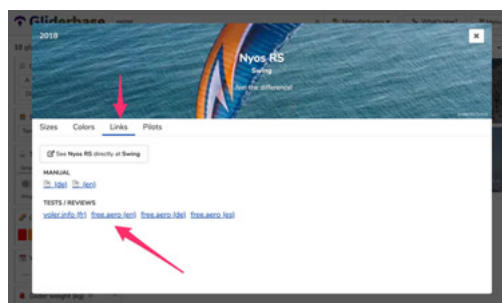
<https://paramotor.pxp.es/fr/>

### GLIDERBASE AND FREE AERO

We have already introduced the new paraglider database Gliderbase. It has all but replaced the defunct Para2000.org.

From now on, it will also feature a link to the new tests in free.aero.

The existing tests will be added little by little.







## CUSTOMIZED FLYWEAR FOR SOPHISTICATED PILOTS

NO MORE AIR DRAUGHT AT THE NECK WITH HOODY OVER HELMET



CREATE YOUR OWN FABRIC MIX



Didier Durand and Fabien Encelle will continue to look after the paragliding side of the business at Péguet.

### THEIR BIGGEST STRENGTH IS THEIR TEAM WORK.

For three generations Péguet have manufactured the maillons which are the principal permanent connection between the risers and the lines.

Péguet was bought by the French company Wichard, which also has a very long tradition in connectors, but more in the nautical world: this year they celebrate their 100th anniversary!

This synergy will allow Péguet to continue production and marketing of their maillons as normal, whilst giving an extra guarantee of their continuity.

Wichard, a one-hundred-year-old company, based in France.



PÉGUET



ADMINISTRATION: France  
DESIGN: France  
MANUFACTURE: France







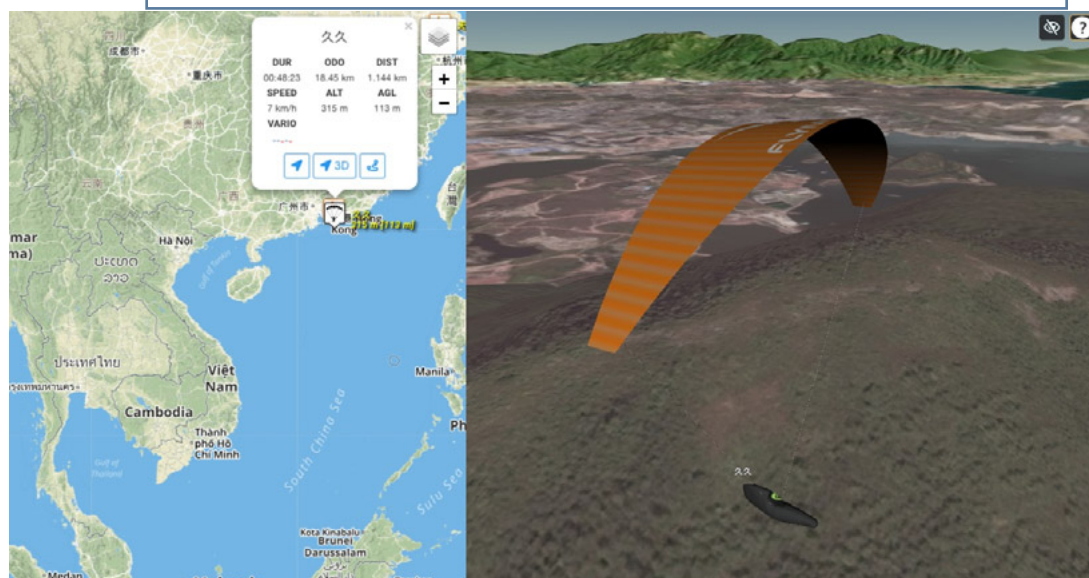
FLYMASTER  ADMINISTRATION: PORTUGAL  
DESIGN: PORTUGAL  
MANUFACTURE: PORTUGAL

Nuno Gomes@ Coupe Icare 2018

SEEN // HEARD @  THERMIK 2019

Visualizing the sport is also a goal of Flymaster, with a clear focus on competitions with live-tracking. Whatever Live, Tracker & Co. deliver to the Flymaster cloud can be viewed in almost live perspective – like in a demo of a PWC with multiple monitors which gave a most immersive feeling like with sports TV. Flymaster's tracker technology is again behind this year's X-Alps, but the use of the new, superior online presentation is still being negotiated. And last but not least: a new, top notch flight computer with color display is on the 2019 schedule as well, but details are still under cover.

 by Stefan Ungemach.



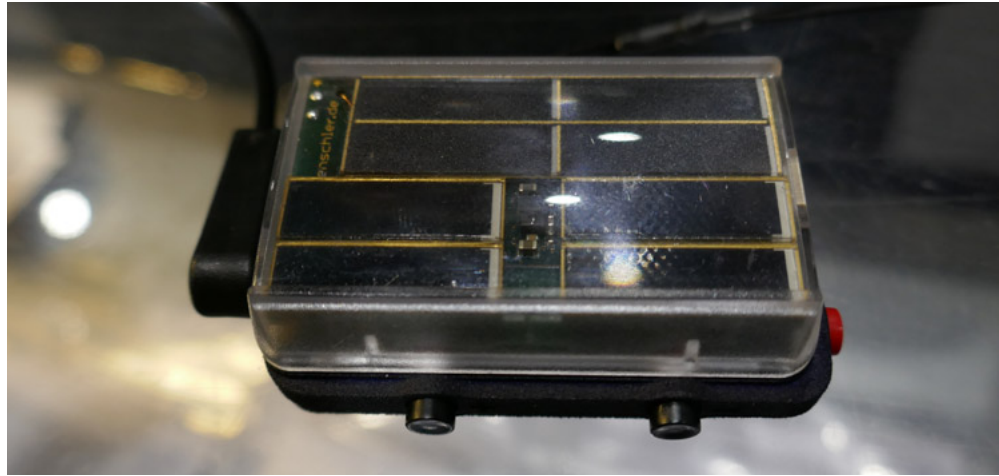


RENSCHLER


 ADMINISTRATION: ALLEMAGNE  
 DESIGN: ALLEMAGNE  
 MANUFACTURE: ALLEMAGNE

**SEEN // HEARD @** 

Uwe Renschler presents the solar helmet vario Solario+ which focuses on extended battery life, speech output for flight parameters and setup, and a gesture control allowing the pilot to control the instrument without letting go the brakes. A GPS version is available.

 S.U.

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 by **BIDALOT**

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Infoline

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The instrument as seen @ Thermikmesse



SYRIDE

 ADMINISTRATION: France  
 DESIGN: France  
 MANUFACTURE: France

 The team @  
 Coupe Icare 2018

## SEEN // HEARD @ THERMIK 2019

Syride have just updated the firmware of their top instrument SysEvolution. The major change is the BT connection to a wifi hotspot (like a smartphone). With this feature the instruments allows the sending of three pre-defined SMS messages for emergency and retrieval, and they get up to 4 live weather widgets (manual, closest, closest hill and closest valley) on the display.

 S.U.




SKTRAXX


 ADMINISTRATION: Germany  
 DESIGN: Germany  
 MANUFACTURE: Germany

**SEEN // HEARD @** **THERMIK 2019**

Skytraxx upholds the tradition by presenting the model 2.1 which poses as the perfect allrounder. The robust and very small rubberized housing (much smaller than a 2.0, and only 149g) contains FANET/FLARM, WiFi/BT, thermal and FAI assistant, customizable pages and new smart controls. A dedicated H&F mode records the hike and even supports the navigation on pre-loaded tracks up to the launch. A large obstacle database with smart notifications is also integrated – for free, without any (FLARM-like) annual subscription. Both model families are also currently being updated to worldwide airspace (OpenAIP) and launch (ParaglidingSpot) database providing automatic updates.



The new Skytraxx 2.1 replaces version 2.0: a big step...



# Windsriders.fr

## Mountain&Flight

**Ethic and awesome**

Reversible Jackets,  
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- Flight Muffles**

**BECOME  
A DEALER**



# INSTRUMENTS IN THE NEXT EDITION

## INSTRUMENTS

We've had to hold back some articles for a future edition: there are lots of innovations in trackers such as the Protegear A\*Live which combines GSM and Iridium, which we have just received: a great alternative to SPOT and even to Garmin DeLorme.

We will also have an in-depth review of the new XCTracer with FLARM and the new Volirium, as well as the new functions on the GPS-Bip.

Tracking by GSM and Iridium depending on availability: the German Protegear A\*Live is finally available. One of the causes for the delay was due to some of the specific characteristics of the French GSM networks..



Information and tests: the new version of the GPS-Bip (shown here in the hands of Luc Armant from Ozone. The team work with this instrument to measure their prototypes).

The Volirium P1: this vario is gradually getting more and more functions. We are currently testing it intensively with a group of competitors.





NEO


 ADMINISTRATION: France  
 DESIGN: France  
 PRODUCTION: France

## SEEN // HEARD @ THERMIK 2019

Present for the first time at Thermikmesse, Neo's stand, a manufacturer who pride themselves in being 100% made in France. Neo created a lot of interest amongst the pilots, especially with their String, Suspenders and StayUp harnesses. Neo also displayed in detail their bag/harness which was the original Shorty concept: suitable for both speedriding and hike&fly, you can leave the wing attached to the karabiners, and the harness seat comes out of the bag without it having to be turned inside out. It is very precise in thermals as well and allows an easy transition from upright to sitting position for ground handling as well as for speedriding. It has integrated Koroyd Propack back protection and therefore weighs around 1.5kg depending on the size. The Airbag protection is optional. Volume of the back pack: 65l.



Neo's stand at Thermikmesse, just before the opening rush.

The Shorty with standard Koroyd Propack protection (13mm thick, 150g, certified CE)





The Body Picture 2.0 outfit integrates a Body harness with Koroyd EOP 2.0. back protection. As an option: an Arva Reactor avalanche backpack with an inflatable airbag.

A significant improvement in the Body: it is easier to adjust, because the strap goes into a cover



## WHO'S WHO?

The founder, designer and owner of Neo, Eric Roussel, with some very modern clothing. Picture/Neo

Photo: Sascha Burkhardt





KORTEL



ADMINISTRATION: France  
DESIGN: France  
MANUFACTURE: Asia

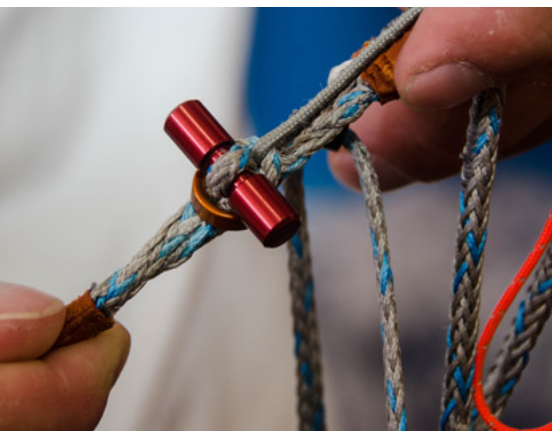
### KORTEL KRUYER III

In the photo, Max Jeanpierre, former top-level competitor and, since 2006, joint manager of Kortel Design (with Denis Cortella) holding the Kortel Kruyer III.

Amongst the numerous improvements, there is finally a real means for opening and closing the harness, without having to step in and out of it. The system is simple and ingenious, as you can see in the photos below.

Remember that Kortel Design is also a pioneer of adjustment mechanisms using splices...

[www.korteldesign.com](http://www.korteldesign.com)







# OZONE BUZZ Z6

## OZONE BUZZ Z6

The Ozone Buzz is this manufacturer's entry level EN B wing. The new version 6, has just been launched. As usual, for this classification of Ozone wing, the aspect ratio hasn't changed and the plan-form also remains similar. On the other hand, the profile and the SharkNose have been optimised and between two cell walls, the air intakes have been given 'G-Strings' as on the Rush 5. The internal structure has been completely revised and the drag from the lines reduced by 20%. At full speed, the glide angle has gained half a point, and about quarter to a third when trimmed.

[www.flyozone.com](http://www.flyozone.com)

OZONE

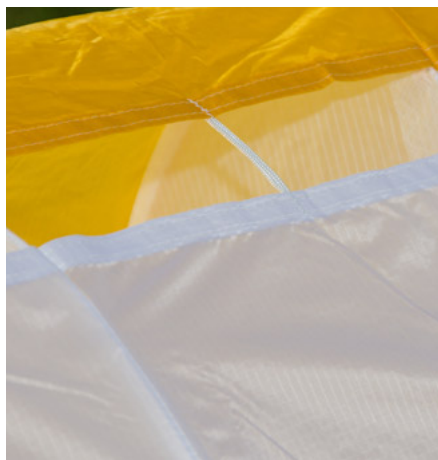


ADMINISTRATION: United Kingdom  
DESIGN: France  
MANUFACTURE: Vietnam



BUZZ Z6 TECHNICAL DATA						
MANUFACTURER: OZONE						
Web : <a href="https://flyozone.com/paragliders/en/products/gliders/buzz-z6/info/">https://flyozone.com/paragliders/en/products/gliders/buzz-z6/info/</a>						
DATE	2019	2019	2019	2019	2019	2019
SIZE	XS	S	MS	ML	L	XL
CELLS	48	48	48	48	48	48
FLAT SURFACE AREA [m²]	22.2	24.1	25.8	27.3	29	31.3
FLAT WINGSPAN [m]	10.69	11.14	11.52	11.85	12.22	12.71
FLAT ASPECT RATIO	3.62	3.62	3.62	3.62	3.62	3.62
ALL UP WEIGHT [kg]	60-70	70-84	82-94	90-104	100-114	112-128
WEIGHT OF THE WING [kg]	4.31	4.63	4.84	5.05	5.4	5.68
FREE FLIGHT CERTIFICATION	LTF/EN B	LTF/EN B	LTF/EN B	LTF/EN B	LTF/EN B	LTF/EN B
Materials Top Surface Cloth: Dominico 30D MF						
Bottom Surface Cloth: Dominico N20D MF						

The Ozone Buzz 6 is an entry level EN B wing. Nonetheless it has been equipped with numerous top of the range technologies, such as the G-Strings seen below on a Rush 5.







### A WELL-BEHAVED SINGLE SKIN

Apparently, one truth about single skins still hasn't reached everyone yet, which is why we are doing a reminder:

- Single skins move about more in turbulence, but the amplitude of the movements remains lower than on classic wings.
- The amplitude of the oscillations after collapses and other incidents are strangely even smaller, and this often gives rise to the As in certification.

- It's only when exiting a stall that these wings are sometimes given a 'C'; this is also due to their small size. But, in any case, most will only dive up to a certain, well behaved, point (See the nice stall on the following page).
- With the same all up weight, the sizes are smaller than the classic wings thanks to the greater lift coefficient...
- which, for some single skin wings, makes climbing in weak thermals easier.
- The speed is less than that of classic wings, but the latest generation of single skin wings have made massive gains thanks to clever rigidifications.

In the next issue, we will test, amongst others, the Skyman Sir Edmund Race as well as the Independence Grasshopper.

Made in ~~Chartreuse~~  
with

TOP SECRET



A magnificent stall on the Skyman Sir Edmund Race 6.01, size 20 (certified EN B) flown by the boss himself.

As long as you pull down gently below the stall point and then let the brakes up very gently (!), this wing offers a very nice stall and reverse flight (see further down).

THE END OF FORWARD FLIGHT...



THEN A NICE FLIGHT BACKWARDS...





# OZONE XXLITE 2

*Six years after the first XXLite and, after the arrival of numerous other high-performance single skins from their competitors, Ozone have brought out the XXLite 2.*

**J**ust a reminder that the modern single skins were launched independently by two different manufacturers: the Open Source project by Pere Casellas with his Barretina Hyper Lite in 2010-11 and the XXLite by Ozone, in serial production from 2012 onwards, after several years of development.

For more information on this story: see our previous dossier lower down on this page.

During our tests, the XXLite 1 by Ozone was relatively twitchy during incidents, compared to the other wings. It suffered, above all, from a lack of penetration in gusts and into wind, as did all the first- and second-generation single skins.

The all new version is equipped with a more 'built up' leading edge: a sausage which is inflated by the airflow. See the details on the following page. Thus, it gains better speed and penetration. We didn't manage to get very precise measurements, but the speed was close to 40 km/h trimmed, and was a few km/h more accelerated. It's close to that of a double surface wing.



Our in-depth report about the first single skins is still available:  
[http://free.aero/en/contentsHTML/Free\\_aero\\_Light\\_E\\_150/index.html?page=27](http://free.aero/en/contentsHTML/Free_aero_Light_E_150/index.html?page=27)



Photo: Véronique Burkhardt/Pilot Sascha Burkhardt



## OZONE XXLITE 1

Comparing both versions of the XXLite: the plan form of the new one seems squarer. And despite appearances, it also has a higher aspect ratio: 5.6 for the XXLite 2 compared to 5.4 for the XXLite 1. The sausage on the new version includes a SharkNose, an entrance and a small exit. The nose on the XXLite1 didn't have an opening at the front.

## OZONE XXLITE 2



Photo: Ozone

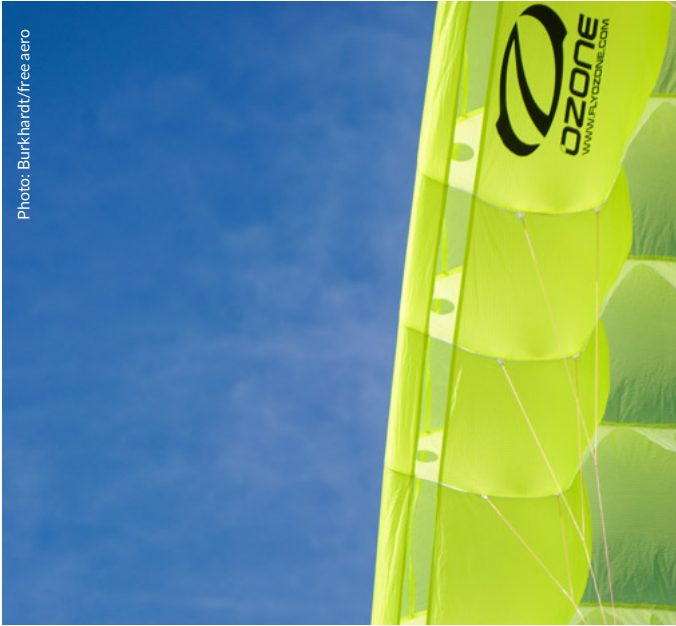


Photo: Burkhardt/free.aero



Photo: Ozone



Photo: Ozone



## CERTIFICATION

The new version is 100g heavier than the first one, but with 1.3 kg for 16m<sup>2</sup>, it remains one of the lightest paragliders in the world. Despite a predominance of As and Bs in the protocol, the wing is certified EN D because folding lines were required to certify it.

## INFLATION

Obviously, as a lightweight single skin without cells, this wing comes up on its own. If there is wind, the wing has a tendency to accelerate at the end as it comes up. Once above your head, the wing is very playful and manoeuvrable, in wind it's even a bit twitchy compared to other single skins.

## PILOTING

Once flying, its easy handling and playful side become evident once again. This wing reacts well to the controls, helped by its good speed.

On the other hand, the wing tips are pretty fragile. The wing tips often close, even in moderate turbulence. These collapses are of no consequence and don't necessarily require any action from the pilot for them to reopen.

## ACCESSIBILITY

This wing, due to some of its movements, seems a bit more demanding in terms of piloting compared to other single skins. The flip side of this twitchy behaviour: a real toy which is precise and manoeuvrable. In addition, if you don't react, the twitchy movements generally don't lead to anything. Moreover, only the pitch forwards after the stall scores a 'C' in the certification, the rest puts it more as a simple EN B mountain wing, or indeed, an EN A for collapses.

## ACCELERATED

In accelerated flight, gaining 3-4 km/h compared to the trimmed speed, its behaviour doesn't change at all. Steering using the rear risers isn't really possible due to the line layout. Piloting is done through the brakes, but a turn which is a bit too steep can automatically cause a small collapse at the tip of the exterior wing, depending on the angle of the turn.



Photo: Véronique Burkhardt/Pilot Sascha Burkhardt





Photo:

The wing tips are fragile, but this is unimportant.

### LOW SPEEDS

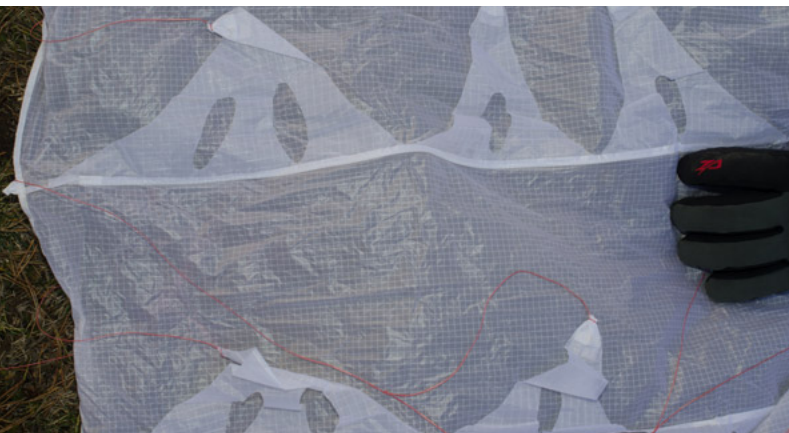
It's good at low speeds. The effect and travel of the brakes are sufficient but, when applied deeply at low speeds you might see the wing start to deform (the two wing tips go behind) whilst the wing continues to fly normally! You are therefore generally warned before a stall happens, which is a very good characteristic.

### CONCLUSION

Compared to the first version, it is faster, is good at low speed, has better behaviour, and still has a weight and volume when folded which are ridiculously low. It is one of a group of wings ideal for mountain use. The EN D certification shouldn't put pilots off buying it. Instead it should be borne in mind that it is based on a certification procedure which is ill adapted and debatable. On the other hand, other single skins are slightly less twitchy and thus better suited to beginners.

*Estéban Bourouffies, Sascha Burkhardt*

The trailing edge rods (up to the glove)



The wing is very manoeuvrable, it has improved performance and is closer to a 'normal' wing than the first version.

You have to hold it a bit when there is wind.



Photo: Véronique Burkhardt/Pilot Sascha Burkhardt

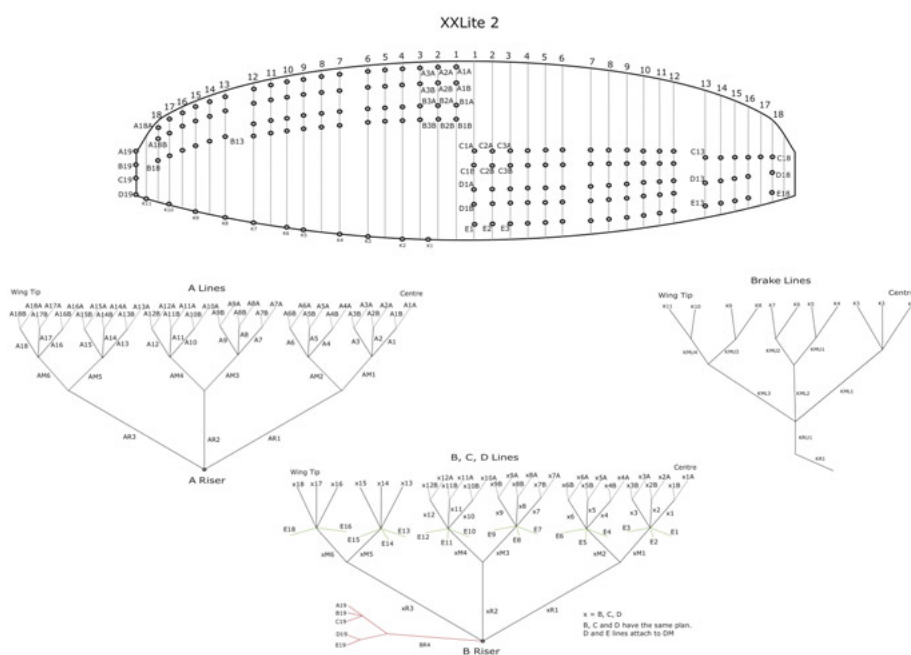


Photo: Sascha Burkhardt/Pilot Estéban Bourouffies



A close-up photograph of a rope knot, likely a reef knot (square knot), made from a thick, grey, braided rope. The knot is resting on a bright green, crinkled plastic tarp. Several thinner, reddish-brown ropes are draped over and around the main knot. A small, black, cylindrical object is positioned on top of the knot.

**Like all single skins, there are numerous attachment points...**



<h2 style="text-align: center;">XXLITE 2</h2> <h3 style="text-align: center;">MANUFACTURER DATA</h3>		
<b>MANUFACTURER OZONE</b> <a href="https://flyozone.com/paraglider/en/en/products/gliderr/xxlite-2/info/">https://flyozone.com/paraglider/en/en/products/gliderr/xxlite-2/info/</a>		
YEAR	2018	2018
SIZE	16	18
CELLS	39	39
SURFACE FLAT [M²]	16	18
WINGSPAN FLAT [M]	9.5	10.1
FLAT ASPECT RATIO	5.6	5.6
ALL UP WEIGHT [KG]	55-90	67-105
WEIGHT OF THE WING [KG]	1.3	1.4
CERTIFICATION	EN/LTF D	EN/LTF D
TESTING HOUSE	AIRTURQ.	AIRTURQ.
PRICE [€]	2600	2680
Fabric: <b>Upper surface</b> Porcher 7000 E71A <b>Lower surface</b> Porcher 7000 E29		





# LEGACY MIKE KÜNG

*The famous acro pilot, pioneer of proximity flying, and outstanding climber of obstacles, will bring out a self portrait book in English. Another chance to look at some stunning photos...*





Mike Küng is the pioneer of working with the rear risers. Without him, a lot of paraglider pilots would today still be ground handling using just the brakes, when the rear risers are the only way to guarantee that you don't get pulled off your feet. Quite simply, because any use of the brakes in wind, temporarily increases the lift, making you lose your adhesion with the ground. Using the rear risers, on the other hand, makes it stall cleanly. We often see Mike do very sharp movements, alternating between a stall and reflying. This technique lets him even climb objects, like here...







Previously, he was, above all, known for his D-Bag jumps from balloons and helicopters, as he did during a crossing of the English Channel in a paraglider in 2003...

He threw himself off, from an altitude of 5300m, to cross a distance of 36 km. The wing had a glide ratio of 8.

In the book, he recounts some of these adventures in detail.







The book contains numerous beautiful pictures and narratives, as well as advice to prepare yourself mentally for all types of adventure. On the other hand, we would have liked more technical advice.

Already back in the prehistory of paragliding time, intensive use of the rear risers near the ground...





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# SKYPARAGLIDER

## SEEN // HEARD @ THERMIK 2019

Sky Paragliders are showing a new harness as well: the latest Reverse has a surrounding zipper for altering the size of the back compartment – large for packing, small for flying (and also for compression). The airbag's air inlets have moved to the side which seems to become a trend with more harnesses, providing an opening undisturbed by legs and more stable in case of „sitting“ landings.

The gliders Apollo (B) and Fides (beginner) are replaced by the newer models Apollo 2 and Aya, and the mountaineering glider Kea 2 is eventually available for test flights.

 Stefan Ungemach.







Au secours chez Skywalk...

Le protecteur de cette  
sellette est gonflé  
comme celui de la  
Range X-Alps 2



# SKYWALK

SEEN // HEARD @  THERMIK 2019

Skywalk present their new harness Breeze, a lightweight (2,2kg/M) allrounder with PermAir protector which is inflated bacteria-proof by one single filling of a pumping bag. That same bag also acts as an additional back protection and as a vacuum bag, allowing the harness to be compressed to nearly handbag size. The seat itself (sporting a conventional GetUp system) can be disconnected for use as an ultralight mountain harness as well. There is also news in the rescue department: the lightweight rescue Pepper gets a sturdier brother named Salsa.

 S.U.



2,2 kg in size M...





A self portrait of Markus Gründhammer, during one of his many winter bivouacs in the middle of February...

# 3000-STAR HOTELS

*The hike and fly season, for many pilots, goes hand in hand with an overnight bivouac before a morning flight.*

**N**othing is easier: curl up in a sleeping bag and sleep under the stars (you can see about three thousand with the naked eye). Markus Gründhammer does this, even in the middle of winter.

## MORE COMFORTABLE

We reviewed some tents in the previous edition, 'Light'. (See page opposite). Over the next few pages, we'll look at two other solutions for sleeping on mountain tops before flying off...

Our test of tents in 2016.



Our test of tents in 2017.





# SKYMAN TENT



After many nights spent on mountain tops before flying down the next morning, Skyman's Markus Gründhammer has developed his own ultralight tent...

Less than 700g with its own transport bag, it takes up very little space.

To put it up, you need walking poles or trees...







Unfortunately, you really need two pairs of poles to hold it up properly and, ideally, also tie the lines between trees. However, two pairs of poles means two people. You really have to like each other a lot to share this relatively small dwelling...

Otherwise, if there are trees, you can obviously support the structure from their branches. It's worth being resourceful to be able to use this shelter which weighs so little.

The tent is single skin and made from paraglider fabric. It is rain-proof, but only up to a certain limit. For Markus from Skyman, it isn't really a tent in the normal sense, but an occasional shelter for hike&fly. 🪂







# Gliderbase

## Paraglider search and comparison

It isn't easy to apply enough tension to the walls to get them well supported, but you can manage to create a cosy space, with the glider bag at your feet.



Photo: Sascha Burkhardt





Photo: Sascha Burkhardt

Well thought out: the ventilation openings can also act as portholes to keep an eye on the conditions before going outside...

Bivouacking is a great opportunity to spend time in the mountains before going flying.

This ultralight shelter costs 169 € from the Skyman online shop.  
<https://shop.skyman.aero>



Photo: Markus Gründhammer





Photo: Sascha Burkhardt

# TENT TENTSILE FLITE+

**U**A hammock tent is a lot more comfortable than a normal tent on the ground. No matter what the ground is like, you can sleep comfortably even without a mattress. The Flying Tent which we reviewed a year ago, was a very good solution, but limited to just one person.

The Flite+ by Tentsile, on the other hand, allows two people to sleep between three trees. The 'all up weight' is 220 kg: enough for two people of average European size, and their equipment!

On the other hand, we had a tendency to roll into the middle of the hammock, if it wasn't perfectly tensioned.

At last: sleeping together in the air. All you need is three trees. And also be ready to carry 3 kg extra.

**Our test of the "Flying Tent" in 2017:** unfortunately, this is only a single person's airborne place to stay.



MARCHE&VOL

## FLYING TENT





Putting it up only takes about fifteen minutes as long as you get the most difficult part done quickly: the alignment of this triangle in the middle of three trees (see photo on the right). You need to play with the possible orientations to find the real midpoint.

You can use just the mosquito net or add a rainproof sheet as a second layer which can, in addition, be held in place by elastic bungee cords pegged into the ground.

The waterproofing is fairly good; we tried it out in average to heavy rain, combined with wind.

The comfort in the air is therefore pretty good, even when there are two of you.

Theoretically, it is also possible to put it up on the ground, because the two aluminium hoops form a self-supporting structure.

For a couple doing hike&fly, this tent could be the ideal solution in areas where there are plenty of trees, if it wasn't for the weight of almost 4 kg with all the accessories, including a fairly heavy ratchet, which is essential for putting it up effectively...



Photo: Sascha Burkhardt



Photo: Sascha Burkhardt



Photo: Sascha Burkhardt



Price: 399 €  
Weight: 3.2 kg  
Maximum load: 220 kg  
Size: 3.25 x 3.25 x 2.7 m  
Folded dimensions: 43 x 19 x 19 cm  
Surface: 4 m<sup>2</sup>  
Maximum roof height: 90 cm

Waterproof fabric 70 D PU coated in waterproof polyester, resistant to a 3m column of water.  
Ground sheet fabric: 40 D reinforced nylon polyester.  
One 6m ratchet strap.  
Two 6m straps.  
Three tent pegs and elastic cords.

<https://tentsile.co.uk/products/flite-tree-tent>





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[staff@icaro2000.com](mailto:staff@icaro2000.com)



This picture comes from a study published by Vivobarefoot, one of the manufacturers of 'barefoot.' shoes.

It was the Red Bull X-Alps pilots in particular who started this trend: to take off, not walking, but more or less running in the high mountains. An activity incompatible with heavy mountain boots. In Light 2017, we already reviewed lightweight shoes, close to walking barefoot. Here's a follow up to this article...

**Mike Küng during the 2011 Red Bull X-Alps, photographed by Felix Wölk. Running up the mountain even with his glider on his back ...**

Our [previous article](#) walking almost barefoot...







Test of the Vivobarefoot Primus Swimrun. The uppers are lower than on the 2019 version.

# SLIGHTLY MOULDED.

## AQUATIC SHOES FOR FLYING?

In our review of the Fivefingers in the last article on this subject, we rarely wore socks. We wondered whether, for 'hike&fly' in mid-summer, it would be even nicer to wear ventilated shoes made from mesh fabric, designed for use in water.

We've already encountered the Merrell Waterpro and the Salomon Techamphibian ([http://en.free.aero/contentsHTML/light\\_2016\\_e/?page=85](http://en.free.aero/contentsHTML/light_2016_e/?page=85)); the same principle seems even more sensible for minimalist shoes. We tested the Vibram Fivefingers V-Aqua shoes as well as the Vivobarefoot Primus Swimrun.



Vibram Fivefingers V-Aqua. Fabric: polyester, silicone, 3.7 mm rubber sole. Weight: 138 g. Price: 99 €.



Vivobarefoot Swimrun. Very universal aquatic shoes, from hike and fly right up to city use.





Vibram Fivefingers V-Aqua and the Vivobarefoot Primus Swimrun. The Vivobarefoot had more room for our toes than normal shoes, which made them more like the Fivefingers.

#### FIVEFINGERS V-AQUA

The Vibram Fivefingers V-Aqua are even more difficult to put on than the other shoes in the Fingers series by Vibram.

They also turned out to be less comfortable than the Vibram Fivefingers Trek Ascent which we tested two years ago. These shoes are tighter as well, which is logical because they are real water shoes. Their grip on the ground is good, but they are not really recommended for our sport. The Fivefingers V-Trek, tested at the end of this article, are more suitable. The V-Treks are not aquatic shoes, but they can be got wet no problem. They dry quickly, even on your feet, and the fabric breathes well...

#### VIVOBAREFOOT PRIMUS SWIMRUN

The Vivobarefoot Primus Swimrun turned out to be incredibly universal.

The Vivobarefoot shoes are also minimalist shoes, with a very thin flexible sole, designed with lots of room for your toes. The goal is to leave a maximum of play, of freedom and flexibility for your toes so that they can work in a way which is close to walking barefoot, whilst at the same time being protected. It is therefore comparable to the Fivefingers system.

Vibram Fivefingers V-Aqua: fully aquatic.







The flexibility of the sole allows it to fit the shape of the ground and obstacles. Real minimalist shoes.

### COMFORT AND FEELING

It is more comfortable than a Fivefingers shoe, because the toes have got a massive amount of space to move around in.

On the other hand, the feeling of the ground is less but still a lot more than classic shoes. Light weight and the flexibility of the soles automatically encourages you to walk more naturally and to put more effort through your toes to place your feet and to cushion your step. The principal of minimalist shoes has been fully realised with the Vivobarfoot, just a notch below the Fivefingers. Because with the latter, you can collect flowers with your toes. This means that they are as tactile as possible.

On the other hand, compared to a Fivefingers shoe, the Primus Swimrun has the immense advantage of being more discreet. They can be used more easily as an everyday shoe, and that is what we did for three months. A very clear observation: there is nothing else as comfortable in the minimalist shoe range. In the office, it is nice to be able to move your toes just for pleasure.

And, as they are fairly well ventilated, they don't get too hot even in the height of the summer. In conclusion, these are the most universal shoes for a mix of uses from hike&fly to town wear. A little added advantage: they are not made from animal products.

And if they really start to smell bad from having been worn without socks, they can go in the washing machine. Moreover, if you need to cross a river going up to launch, they dry out relatively quickly. And in the air, the mesh is sufficiently fine that the air flow doesn't cool your feet down too much. In summer, of course.



Flexible sole: one of the characteristics of minimalist shoes.



The new version has higher uppers than on the ones tested.

### VIVOBAREFOOT PRIMUS SWIMRUN

<https://www.vivobarefoot.com/fr/mens/outdoor/primus-swimrun-boot-sg-mens?colour=Black%2fOrange>

Weight: 267 g

Price: 175 €

Made like a clog so that your feet have total freedom.

Ankle sock in neoprene gives the ankle total mobility in and out of water.

Water-repellent recycled PET mesh to give the minimum 'wet weight'.

Fast draining zones pump the water out with every footstep.

Flexible grippy soles with deep tread to hold firm in mud.

Orange rubber so that they are visible in water.

Vegan





# VIBRAM FIVEFINGERS V-TREK

## TREK ASCENT RELOADED

We have already tested the Trek Ascent which is the most suitable version of the Fivefingers for hike&fly. This model has been replaced by the [V-Trek](#), with a small improvement, uppers which are higher and in a different material. They really are much nicer to wear, and look a bit smarter for use in a town/village, at the office... For hike&fly, the increased protection around the ankle against spiky plants is appreciable.

These shoes offer the same grip and the same feeling through the sole as the Ascent: from May to October/November we felt these shoes were ideal for very light-weight hike&fly walk ins, in mid to high level mountains (not for glaciers or deep snow).

Reread all the advantages and (the rare) disadvantages of the Fivefingers in our previous article about the old model of the Vibram Trek Ascent: <http://www.free.aero/en/contentsHTML/light2017e/?page=35>



Vibram Fivefingers V-Trek



The old Trek Ascent model







Like the previous model, the sole gives a very good compromise between protection, feeling and mobility in the front part of the foot which, remember, is of primary importance for walking naturally.

The only disadvantage: for those who want vegan shoes, the addition of wool in the fabric in this model rules them out as a choice. The previous Trek Ascents didn't contain any wool (except for the winter version).

#### VIBRAM FIVE FINGERS V-TREK (129 €)

<https://5doigts.fr/520-vibram-fivefingers-v-trek-homme-noir.html>

- Weight: 185 g in size 43
- Outer sole: total thickness 8mm (4mm Vibram Mega-grip sole + 4 mm intermediary sole in polyurethane)
- Interior sole: 50% wool and 50% polyester.
- Fabric: 50% wool and 50% polyester to give better control of odour and temperature.
- Usage: casual walking.
- Type of terrain: paths, town
- Washing: cold machine wash



Photo: Véronique Burkhardt



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