

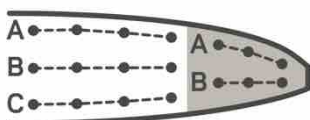


## NOVA MENTOR 7 - HIGH-END EN B PARAGLIDER

### The XC Machine

With the MENTOR 7, NOVA presents the standard version of the successful MENTOR 7 Light. Its unique features, according to the manufacturer from Tyrol, are its high comfort and outstanding glide performance even in turbulent air. This modern Hybrid 2.5-Liner instils more confidence than any other high-end EN B glider. The pilot can concentrate on tactical cross-country decisions and the enjoyment of flying – ideal conditions for really long and relaxed flights. The first gliders in sizes XS to M will be available from the end of April/beginning of May. Demo gliders will be available at NOVA partners as early as March.

Although NOVA stayed true to the formula "high performance with low aspect ratio", no stone was left unturned in the design of the MENTOR 7. Compared to its predecessors, it is



a **Hybrid 2.5-Liner**. Just marketing slogans or real innovation and technically possible? In a 2.5-liner, the inner two-thirds of the wing are

the same as a conventional three-liner. Therefore, even with big collapses, the wing still behaves as required by the EN B certification. The outer third of the wing, on the other hand, is a two-liner. This adds up to more performance, more efficient control of roll and pitch, and optimised wing twist – especially in accelerated flight! How come?

**Advantage #1: increased performance.** Fewer lines means less drag. And since parasitic drag increases with the square of the air speed, the further the pilot pushes the speed-bar, the more it increases.

**Advantage #2: optimised wing twist.** When the pilot pushes the speed bar on a conventional three-liner, the A-lines are pulled down the furthest, the B-lines somewhat less. However, the ideal length of the speed-bar travel is always in relation to the chord (= distance between leading and trailing edge). As the wing becomes narrower towards the wingtips,



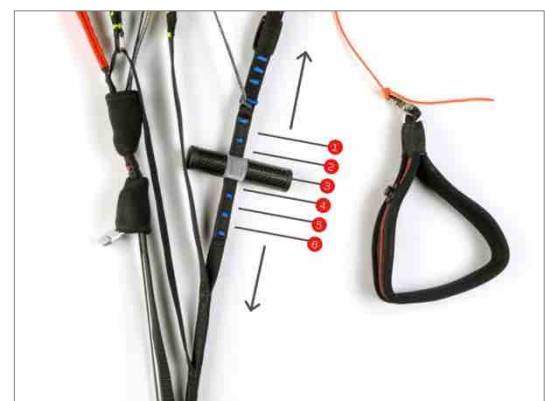
the three-liner setup results in a somewhat "damaged" aerofoil. The two-liner design leads to a higher aerodynamic quality of the aerofoil on the outer wing when pushing the bar.

**Advantage #3: efficient C-riser control.** Generally, a pilot wants to control for pitch and roll movements without negatively influencing the aerofoil – particularly when flying at speed. Pitch movements can be compensated by using the speed bar, but it is impossible to do this asymmetrically (no roll control) and the wing reacts rather slowly. Compensating pitch and roll with the brakes results in a performance-reducing kink in the profile. For this reason, NOVA developed the Speedbrake Riser (SBR) some years ago, a system that, in variations, is now standard on all performance EN B and C three-liners. However, this system results in the same problem on a three-liner as pushing the speed-bar – the deflection actually acts too strongly in the outer wing in relation to the chord. Here, too, the design as a Hybrid 2.5-Liner improves the profile shape of the outer wing.

**Extremely smooth-running C-riser control:** if your previous glider was a three-liner, you first have to get used to the C-riser control on the MENTOR 7 – it's just a little different. Once mastered, it becomes a joy. It works very efficiently, immediately and with little effort. Philipp Medicus, Head of R&D at NOVA, explains why: "On the MENTOR 7, the rear lines in the outer wing are deliberately not connected to the C-risers, but to a runner between the A and B-risers. This means that only the two inner thirds of the wing are deflected when the C-risers are pulled. This way, roll and pitch movements can be compensated perfectly even at full acceleration – but the force required is reduced by about a third! A huge advantage for cross-country pilots on long flights with strong thermals!"

**HAC-Handles for better ergonomics:** for optimal ergonomics, NOVA has fitted the so-called HAC-Handles (Height Adjustable C-Handles) on the C-risers. C-handles are common on two-liners. On the MENTOR 7, they are made of carbon and are height-adjustable in six positions to suit the pilot's arm length.

In keeping with the design as a Hybrid 2.5-Liner, NOVA has **optimised the profile for speed** with the help of its new simulation software. The profile ensures a high degree of





pitch stability even at low angles of attack. It is nearly impossible to collapse the MENTOR 7. In numerous simulations, the internal pressure as well as the stress distribution were refined to minimise the deformation of the glider when accelerated. The cell openings are designed so that the internal pressure remains ideal even when flying full speed-bar. The result is **excellent glide performance** with a flat polar and an exceptional level of stability and smooth flight – even at maximum speed and in turbulent air... conditions that are normal on epic days. The MENTOR 7 just cuts through everything.

**Safety:** when talking about the "safety" of a glider, there is a) the question of susceptibility to collapses and stalls and b) how the glider reacts when they happen. Only the latter plays a role for the certification, but for the pilot's "perceived safety" collapse resistance is also vital. And this is one of the outstanding strengths of the MENTOR 7. One thinks "here we go" – but nothing happens, although the outer lines have gone slack. Also unusual is the very late stall point of inner trailing edge when thermalling. Since serious accidents occur time and again, especially when thermalling close to the slope because the pilot pulls the inner brake a little further - this means a real gain in safety. And what happens if the wing does collapse? The MENTOR 7 impresses with its very manageable extreme flight behaviour. For example, accelerated collapses are even more gentle than on the previous models. Also, the probably lowest aspect ratio in the high-end EN B class (5.5 flat, 4.18 projected) is a real plus point in terms of safety, because it **reduces the risk of a cravat**.

Same as the MENTOR 7 Light, there is an **extended weight range** of 5 kg. The pilot is still flying legally if they are carrying extra gear (e.g. vol biv, ski & fly, climb & fly). For XC flying, however, NOVA suggests to load the MENTOR 7 to the "recommended weight range". Yet, several members of the NOVA Pilots Team no longer fly the MENTOR 7 "right at the top", but in the upper third of the recommended weight range. The wing still flies very fast and stable. Besides, there is no penalty in the handling. But you enjoy a better climb rate.

**Rods for support:** the 2.5-liner design requires optimisation of the force application into the canopy. NOVA therefore also uses rods in the rear area of the wing and has abandoned the

## NOVA MENTOR 7 – Facts

### Hybrid 2.5-Liner, EN/LTF B, with 66 cells

- **Aspect ratio:** 5.5 flat, 4.18 projected
- **Sizes:** XS, S, M
- **Areas projected:** 19.80 / 21.77 / 23.72 m<sup>2</sup>
- **Weights:** 5.10 / 5.30 / 5.60 kg
- **Certified weight ranges:** 70-95 / 80-105 / 90-115 kg
- **Recommended weight ranges:** 80-90 / 90-100 / 100-110 kg
- **Extended weight range:** approximately 5 kg higher maximum take off weight than previous models (for example for vol biv)
- **Speedbrake Riser 2.0:** smooth and very effective responses to inputs, as with a 2-liner
- **HAC-Handles:** six-position height-adjustable carbon handle on the C-riser
- **NOVA Double 3D-Shaping:** for even fewer creases on the leading edge
- **NOVA Air Scoop:** optimised air intake that increases the internal pressure
- **Mini-ribs:** a more aerodynamic trailing edge
- **Speed-bar pulleys:** Ronstan, with ball bearings
- **Full NOVA guarantee**



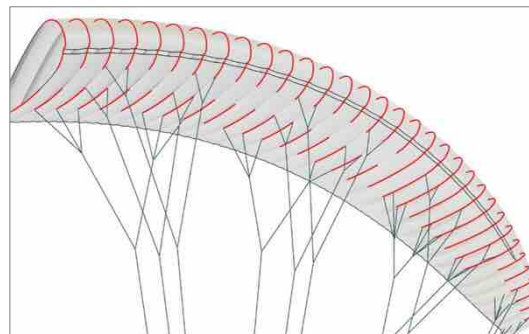
concept of Easy Packing. The MENTOR 7 should be packed in a concertina bag and then folded using a Pack Roll, or wrapped around the harness.

**Launch:** the MENTOR 7 is inconspicuous at take off. It inflates evenly without the tendency to overshoot. It doesn't go sideways, nor yaws. If necessary, the wing can be braked using the C-risers. As there is no C3 line, what does not work so well are asymmetric corrections via the C-lines. NOVA recommends using the brake for lateral directional corrections. A little tip: to prevent the risers from twisting, there are magnets that hold the A and B-risers together when there is no tension on the lines. Inflating the wing should only involve the A-risers.

**Thermalling:** NOVA does not recommend any particular thermalling technique. The thermal flight behaviour of the MENTOR 7 impresses with its neutrality. Inside or outside brake, marked or no weight shift, narrow or wide radius, low or high bank - the glider doesn't care. It is characterised by its balance and centres itself in the best climb. The pilot gets useful feedback via the brakes; collapses or even stalls are exceedingly rare.

**Quick descents:** instead of pulling the outermost A-lines to pull big ears, NOVA recommends a B3 stall. To do this, the brake handles remain in the hands without a wrap and you pull the B3 lines down quickly and symmetrically by about 40 to 50 cm. As a result, the outer wing folds to the rear. The manoeuvre is stable, there is no flapping of the collapsed wing sections and there is little physical effort. The centre wing does not deform, so the glider keeps its forward flight and lies still in the air. To release, let go of both B3 lines simultaneously and the MENTOR 7 opens with virtually no delay. NOVA also recommends pushing the speed-bar by at least 25 percent during the B3 stall. The B-line stall is not recommended due to the 2.5-liner design. The spiral dive behaviour is typical for the class and controllable.

There is little to say about the **landing**, other than that the MENTOR 7 uses its energy for a very nice flare.



## Success with the MENTOR 7 Light

NOVA was only able to deliver the MENTOR 7 Light late in the 2022 season and only in low quantities. Nevertheless, impressive successes have been achieved with the wing:

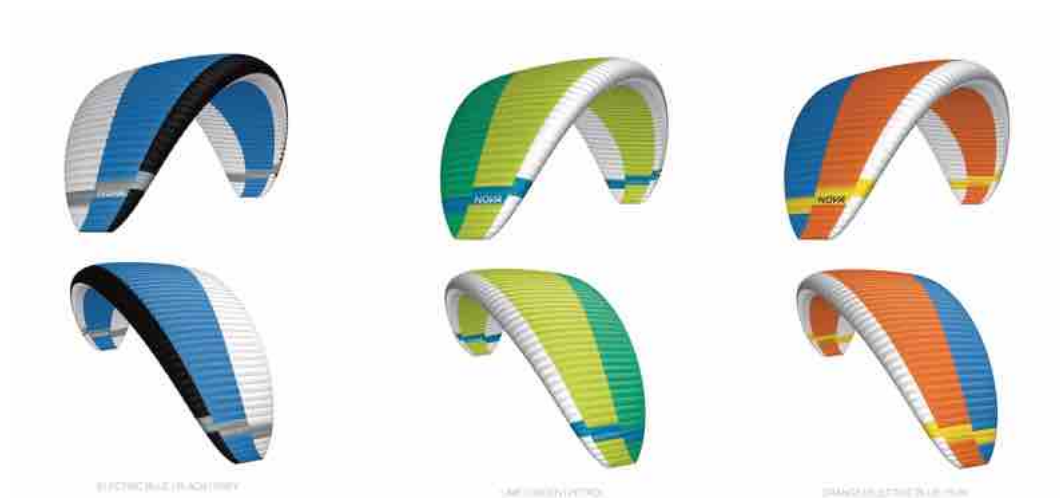
**Ferdinand Vogel** won the renowned Zillertal Battle, praising the glider's top speed and flat polar curve.

**Toni Brügger** was ranked second in the world-wide ([www.xcontest.org/2022/world/de/ranking-pg-standard/](http://www.xcontest.org/2022/world/de/ranking-pg-standard/)) EN-B classification of the XContest and won the Swiss championships.

[www.xcontest.org/2022/switzerland/en/ranking-fai3-pg-fun/](http://www.xcontest.org/2022/switzerland/en/ranking-fai3-pg-fun/).

**Dusan Durkovic** decisively won the Fun class of the Serial Cup in Slovenia. Four of the Top 12 were MENTOR 7 Lights.  
[https://comps.sffa.org/sites/default/files/overall-fun\\_1.html](https://comps.sffa.org/sites/default/files/overall-fun_1.html)

Additionally **Durkovic** flew a flat 270 km triangle with a sensational average speed of 33.4 km/h.  
[www.xcontest.org/2022/world/de/flight/details/mistydule/14.08.2022/08:25](http://www.xcontest.org/2022/world/de/flight/details/mistydule/14.08.2022/08:25)



**In conclusion:** the MENTOR is aimed at pilots who want a lot of horsepower under the bonnet combined with great comfort - comparable to a heavily powered touring saloon car. Performance, smooth flying, confidence, comfort are the keywords. Whether chasing records or simply cruising around the local mountains with a big smile, this wing is for everyone. The first gliders in sizes XS to M will be available from the end of April/beginning of May in three colours each. Demo gliders will be available from NOVA partners as early as March. Detailed information can be found at [www.nova.eu/mentor-7](http://www.nova.eu/mentor-7).

Product and image photos can be downloaded at [www.nova.eu/en/dealer/support/](http://www.nova.eu/en/dealer/support/).

**NOVA** is an innovative and well-respected paragliding manufacturer, whose highest concerns are quality, safety and the enjoyment of flight. NOVA develops and manufactures paragliders and accessories for beginner, intermediate and ambitious advanced pilots - with a focus on cross-country flying as well as hike & fly. The employee-owned company was founded in 1989 and has a healthy equity base. The headquarters are in Terfens, Austria. NOVA has two production facilities in Hungary and Vietnam, which conform to the highest social and environmental standards. The company has a worldwide distribution network and is one of the market leaders in paragliding.