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TECHNICAL DATA	304S 18m	304S 20m **	304SE 15m **
GEOMETRY			
Wing span	18 m 59 ft	20 m 65.6 ft	15 m 49.2 ft
Wing area	11,8 m ² 127 ft ²	12,6 m ² 135 ft ²	8.7 m ² 94 ft ²
Aspect ratio	27,43	31,80	26,37
Fuselage length	6,79 m 22,28 ft	6,79 m 22,28 ft	6,79 m 22,28 ft
Overall height	1,48 m 4,86 ft	1,48 m 4,86 ft	1,3 m 4,3 ft
Fuselage height	0,83 m 2,72 ft	0,83 m 2,72 ft	0,83 m 2,72 ft
Fuselage width	0,62 m 2,03 ft	0,62 m 2,03 ft	0,62 m 2,03 ft
Airfoil	HPH xn2 *	HPH xn2 *	HPH xn2 *
WEIGHTS			
Empty weight	280 kg 617 lb	300 kg 660 lb	230 kg 507 lb
Maximum take-off weight	600 kg 1323 lb	600 kg 1322 lb	480 kg 1058 lb
Water ballast *	240 l 66 US gal	240 l 63 US gal	180 l 47,6 US gal
Min. wing loading *	29,6 kg/m ² 6,0 lb/ft ²	30 kg/m ² 6,1 lb/ft ²	34 kg/m ² 7,5 lb/ft ²
Max. wing loading	50,8 kg/m ² 10,4 lb/ft ²	47,6 kg/m ² 9,6 lb/ft ²	55 kg/m ² 12,1 lb/ft ²
GLIDE PERFORMANCE			
Best glide ratio	51	> 53	48
at speed	125 km/h 67,5 kt	124 km/h 67 kt	123 km/h 66,5 kt
Min. sink rate (at min. weight)	0,45 m/s 83 ft/min	0,43 m/s 81 ft/min	0,51 m/s 100 ft/min
at speed	66 km/h 36 kt	68 km/h 37 kt	72 km/h 39 kt
LIMITATIONS			
Stall speed (at max. weight)	88 km/h 47,5 kt	85 km/h 46 kt	87 km/h 47 kt
V _{NE}	280 km/h 151 kt	280 km/h 151 kt	280 km/h 151 kt

* modified HQ10-16-42, width reduced to 13,2 %, max. 16,4 at root area
 ** 15m and 20m version in project stage. Same fuselage for both versions.
 Individually optimized wing (304SE) and wing extension ends (20m version) for the best performance.
 Performance is based on calculation data.



HpH
sailplanes

HpH 304S

THE SHARK FAMILY



NEW DIMENSIONS IN GLIDING



HpH 304S shark

NEW FACES ON THE HORIZON

The latest products from the Czech sailplane factory HpH are no facelifts but brand-new developments. Many traditional solutions and sailplane standards have been reconsidered and incorporated into a new design. This results in a distinctly attractive, highly ergonomic sailplane that will satisfy pleasure seeking glider pilots, succeed in contests and surprise even the most aesthetically exacting customers. Equipped with speed flaps, the *HpH 304S shark* is optimized for the FAI 18 meter class (max. take-off weight 600kg/1323 lb). Other versions in development include a open-class version with an extended wing span of 20 meters, based on the same fuselage. Furthermore, a two-seater with jet or turbo engine option is in development.



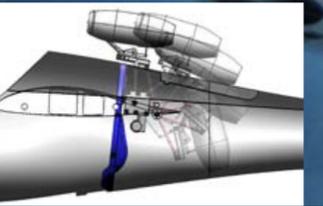
AERODYNAMICS WITH A WIZ

The airfoil, only 13.2% thick, was designed mainly in order to reduce the influence of insect contamination on the flight performance. Towards the wing root the thickness increases to 16.4%, with special care to the wing root transition. The wing ends with an elliptically-formed leading edge and 3D curved wingtips are specially shaped to minimize the induced drag. Three-part flaperons through the whole wing span are set in the wing trailing edge. This provides the pilot with good handling and improved flight performance. The wing inner structure and its reinforcement result from detailed FEM calculations in combination with numerous break tests. The result is a carbon fiber structure that makes the cruising flight very comfortable and offers maximum performance in both strong and weak thermals.

The water ballast is located in integral wing tanks of 180 liter capacity. There are additional ballast tanks in the tail and optionally in the fuselage. The maximum take-off weight of the 18 m version is 600 kg, raising the maximum surface loading up to 50.8 kg/m². This combination results in a gliding ratio of more than 51 at 125 km/h. Three-stage air brakes are a must to reach sufficient sink rate and allow landing at high glide path rates and at exact landing points. All steering units have automatic connections. This also applies to the ballast tanks, release controls and the slide-in wing end. Locking proceeds by means of a simple hinge, and the flaperon attachment is automatic as well. Our aerodynamically covered wingtip wheels are highly welcomed by pilots because they facilitate take-off and landing, and prevent damage. The design shows an attention to even the smallest detail, such as the elevator trailing edge being elliptically formed thanks to CNC technology.



Turbine flying:
_ fuel tank 33 l
_ flight endurance 45-50 min.
_ Ø performance 150 km @ 150 km/h



FLY LIKE JAMES BOND :-)

The jet engine was developed for HpH by former MTU engineers. It's size, weight, thrust and fuel consumption have been tailored especially for the use in a glider.

Why choose our JET propulsion unit?

- Low weight:** System weight of less than 10 kg (22 lbs)
- Wide speed range:** It allows speeds ranging from slow climbing to glider V_{NE} while keeping constant thrust throughout the velocities.
- User friendly** operation: Advanced electronics automatically control the start-up/shut-down sequence, thrust regulation as well as the retraction of the whole unit. There's no need for choke, propeller brake, decompression levers and other controls. Operate with a single switch, power-up with a single knob!
- No vibrations:** Cruising with a jet (engine) is pleasant, silent and you don't feel any vibrations in the cockpit. Not even the best propeller systems can compete!
- Maintenance-free** & easy to install: Disassemble in 5 minutes using standard tools, pack in a small and light package, send to us for inspection and keep on gliding in the meantime.
- Special software** for your local conditions: Gliding in Sweden or in Australia? Get your **customized software settings!**
- Optimal fuel consumption** of 17l/100km (6 gal/100 nm) – A virtually maintenance-free engine with reasonable operating costs.

It corresponds in design with the wing ends improving the parallel reduction of induced drag. The elevator connection is automatic, the locking proceeds by use of a single pin. And the perfect functioning of the rudders in a Glasflugel 304 is already legend ...

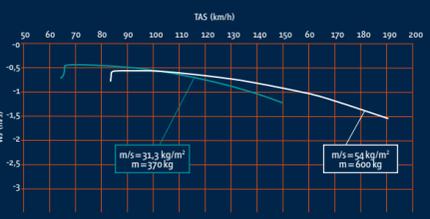
SAFETY – INTEGRAL

Numerous FEM calculations, break tests and crash simulations led to a new safety cockpit that can help to save life and to minimize damage. For example, the »Roger hook«, for safe emergency removal of the cockpit, is an integrated standard in the solid frame.

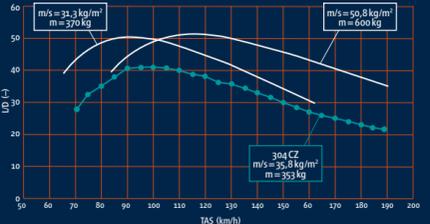
ENGINE – AT THE PUSH OF A BUTTON

The fuselage cutout is prepared for a power unit; which one depends on your individual preference: self-launcher (Solo 2625-01) or JET engine. The engine compartments and the fuel tanks are parts of the primary structure. In this manner we can carry out the installation of your desired engine version at any time.

SPEED POLAR 304S SHARK 18m



L/D POLAR 304S SHARK 18m



THE "COMFORT FACTOR" – SAFE AND EASY

Cockpit ergonomics was always one of the main quality features of Glasflugel 304 sailplanes. The safety cockpit of the 304S takes advantage of the proven concept. As a glider pilot you know how important the feeling of comfort and safety is during the flight. These attributes are achieved by, among other factors, the use of high-quality materials. Take pleasure in the massive carbon aramid frame, superior and durable leather interior, sensibly designed instrument panel as well as hand hugging controls. All details are finished with special care – take a look at the control stick or canopy locks! Also pilots above 6ft tall find a very good seat position thanks to enough space for elbows and shoulders. And, of course, we can make adjustments and customizations to suit your specific needs.



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M8 Medien Berlin | mail@macht.de
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Technische Änderungen vorbehalten.

OUR TYPE RANGE	
304C WASP	15m FAI Standard Class
304S SHARK	18m FAI Class
304S jet SHARK	18m FAI Class, with Jet TSS (Turbine Sustainer System)
304MS SHARK	18m FAI Class, Selflauncher with BSS (Binder Solo System)
304TS TWIN SHARK	20m FAI Class Two-Seater with BSS or TSS (in development)



MORE THAN 100 HPH SAILPLANES WORLDWIDE IN USE

WWW.HPH.CZ

HpH spol. s r.o.
Čáslavská 126
28401 Kutná Hora
Czech Republic
Phone +420. 327. 512 633
Fax +420. 327. 513 441
info@hph.cz
N 49° 56' 47.9"
E 15° 17' 7.87"