TECHNICAL DATA	304 S SHARK	304 MS SHARK	304 JS SHARK
GEOMETRY			
Wing span	18 m | 59 ft	18 m | 59 ft	18 m | 59 ft
Wing area	11.74 m^2 | 126.3 ft^2	11.74 m^2 | 126.3 ft^2	11.74 m^2 | 126.3 ft^2
Aspect ratio	27.43	27.43	27.43
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	1,48 m | 4.86 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	325 kg | 716 lb	395 kg | 870 lb	355 kg | 783 lb
Maximum take-off weight	600 kg | 1,323 lb	600 kg | 1,323 lb	600 kg | 1,323 lb
Max. Water ballast	240 l | 63.4 US gal	120 l | 32 US gal	200 l | 53 US gal
Min. wing loading *	33.6 kg/m^2 | 6.9 lb/ft^2	39.6 kg/m^2 | 8.1 lb/ft^2	36.2 kg/m^2 | 7.4 lb/ft^2
Max. wing loading	51.1 kg/m^2 | 10.47 lb/ft^2	51.1 kg/m^2 | 10.47 lb/ft^2	51.1 kg/m^2 | 10.47 lb/ft^2
GLIDE PERFORMANCE			
Best glide ratio	51	51	51
at speed	125 km/h | 67.5 kt	125 km/h | 67.5 kt	125 km/h | 67.5 kt
Min. sink rate (at min. weight)	0.45 m/s | 83 ft/min	0.49 m/s | 96 ft/min	0.47 m/s | 93 ft/min
at speed	66 km/h | 36 kt	71 km/h | 38 kt	68 km/h | 37 kt
LIMITATIONS			
Stall speed (at max. weight)	88 km/h | 47.5 kt	88 km/h | 47.5 kt	88 km/h | 47.5 kt
V_{NE}	263 km/h | 142 kt	263 km/h | 142 kt	263 km/h | 142 kt

* modified HQ10-16-42, width reduced to 13,2 %, max. 16,4 at root area

Performance is based on calculation data.

HpH sailplanes

Shark

NEW FACES ON THE HORIZON

Our whole team of HPH is proud of the Glasflugel heritage und its most genious 304 sailplanes. Nevertheless, all our HPH gliders are no facelifts but new developments. Many traditional solutions and sailplane standards have been reconsidered and incorporated into a completely new design. This results in a distinctly attractive, highly ergonomic sailplane that satisfies pleasure seeking glider pilots, succeeds in contests and surprises even the most aesthetically exacting customers. Equipped with flaperons, the HpH Shark is optimized for the FAI 18 meter class (max. take-off weight 600 kg / 1,323 lbs). The design shows an attention to even the smallest detail, such as the elevator trailing edge being elliptically formed thanks to CNC technology.

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 the 3D curved Shark 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.

SMOOTH HANDLING

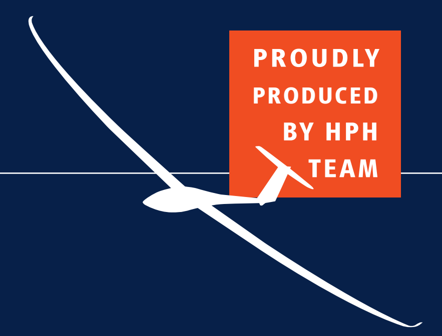
The water ballast is located in integral wing tanks of 180 liter capacity. There are additional ballast tanks in the tail and optionally in the fuselage. The maximum take-off weight of the Shark is 600 kg, raising the maximum surface loading up to 51.1 kg/m^2. This combination results in a gliding ratio 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 Shark elevator trailing edge 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 like those of a Glasflugel 304 is already legend…

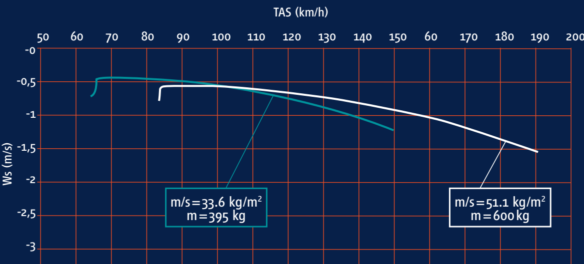
SAFETY – INTEGRAL

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.

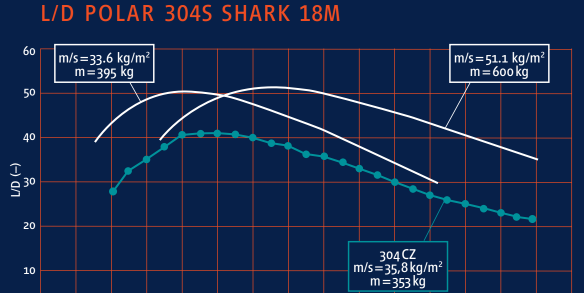


PROUDLY PRODUCED BY HPH TEAM

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 HPH Shark 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 hiqh-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.

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 (Binder-Solo 2625-01), JET engine or FES electric motor. 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.

TURBINE SYSTEM:

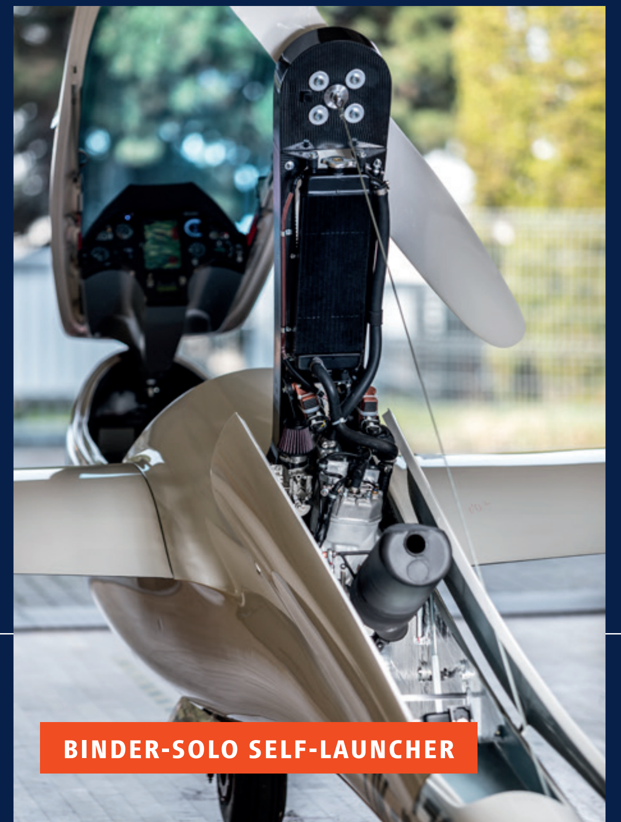
Fuel tank	33l
Flight endurance	45–50min.
Performance Ø	150km @ 150km/h

BINDER SOLO ENGINE SYSTEM:

Type	Binder Solo 2625-01
Weight	23 kg / 50.7 lbs
Alternator	12 V / 150 W
Maximum power	38 kW / 52 hp
Max. cont. RPM	6250 l/min
Compression	9.5 : 1
Fuel consumption	21,5 l/h
Lubricant	1:50 Autosuper 2-stroke engine oil
Propeller pillar	Carbon fibre

The new digital engine monitor (in development)

TURBINE



BINDER-SOLO SELF-LAUNCHER

WWW.HPH.CZ

© photography: Jochen Ewald (†), Petr Kolmann
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11/2019 | Specifications subject to change without notice.

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N 49° 56' 47.9''
E 15° 17' 7.87''

THE SHARK FAMILY

304 C WASP	15m FAI Standard Class
304 S SHARK	18m FAI Class
304 JS SHARK	18m FAI Class, with Jet TSS (Turbine Sustainer System)
304 MS SHARK	18m FAI Class, Selflauncher with BSS (Binder Solo System)
304 e SHARK	18m FAI Class, Front electric sustainer (FES system)
304 TS TWIN SHARK	20m FAI Class Two-Seater, Selflauncher with BSS

LOVE TO FLY SINCE 1964