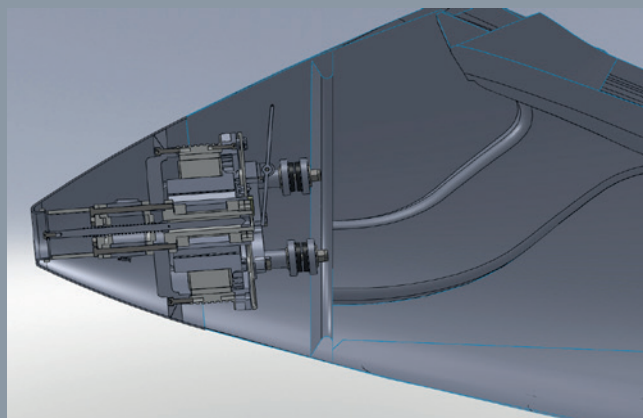


FES SYSTEM COMPONENTS

Together with LZ Design as *the* expert of the certified FES System we adapted the Shark to the electric sustainer capability.

**PROUDLY
PRODUCED
BY HPH
TEAM**



TECHNICAL DATA SHARK ES

GEOMETRY

Wing span	18 m 59 ft
Wing area	11.74 m ² 126.3 ft ²
Aspect ratio	27.43
Fuselage length	6.79 m 22.28 ft

WEIGHTS

Empty weight	365 kg 805 lbs
Max. take-off weight	600 kg 1,323 lbs
Water ballast	180 l 48 US gal
Min. wing loading	37 kg/m ² 7.6 lbs/ft ²
Max. wing loading	51.1 kg/m ² 10.47 lbs/ft ²
Cockpit load	70-110 kg 154-242 lbs

PERFORMANCE

Best glide ratio	> 50
at speed	125 km/h 67.5 kt
Min. sink rate (at min. weight)	0.50 m/s 98 ft/min
at speed	68 km/h 37 kt
Climb rate with FES	1.5–2 m/s

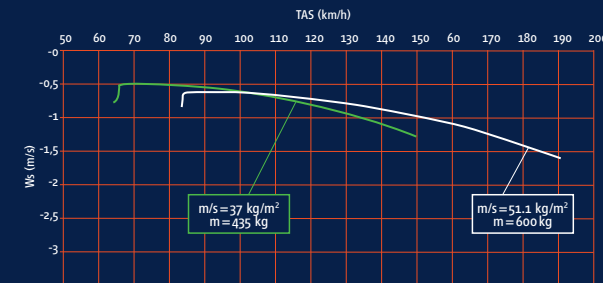
LIMITATIONS

Stall speed (at max. weight)	88 km/h 47.5 kt
V _{NE}	263 km/h 142 kt
Range with FES *	~ 80 km

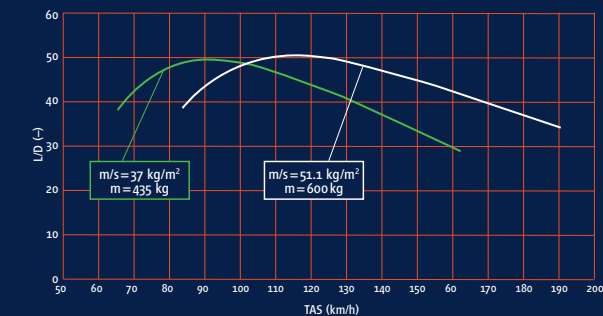
Performance is based on calculation data.

* In development: LiPo GEN3 system with 20% more power / 2 x 16 kg, range over 100 km

SPEED POLAR SHARK ES 18M



L/D POLAR SHARK ES 18M



ENGINE SYSTEM

Battery technology *	LiPo GEN2 system
Battery weight *	2 x 14 kg 2 x 31 lbs
Maximum power	23 kW
Maximum RPM	4,500

WWW.HPH.CZ

HpH
sailplanes

eShark

- INSTANT START
- HIGH START RELIABILITY
- LOW VIBRATION
- NO HEIGHT LOSS
- SIMPLE OPERATION
- NO FUEL TO BUY OR MIX

The FES propeller blade during transport or when on the airfield with a removable cover. The Cobra trailer nose cone incorporates cut-outs for the propeller during transit. The FES propeller is interlocked to prevent inadvertent operation on the ground.

THE FUTURE IS ELECTRIC

With the introduction of the Shark ES, HPH moved into the electric gliding era. The partnership with LZ Design continues our philosophy of working with the best companies – to bring the Electric Shark quickly and with a very high “out-of-the-box” product maturity to market. The glider itself is in all parts the same as the Shark S family, incorporating the experience, quality and precision that our team at HPH is donating to each of our ailpanes.

The Shark ES delivers a significant battery-powered self-retrieve capability of approximately 100 km’s which is more than enough to get you to an airfield or in many cases back to soaring conditions or to your home base.

The system uses two GEN2 LiPo batteries which each come with a dedicated balancing charger. One battery weighs ~14 kg and only loses about 1% of its charge in a month. They still retain 70–80% of their charge after 1500 complete recharge cycles. Installing the batteries takes about 5 minutes.



SIMPLE AND SAFE OPERATION

The LXNAV FES controller stays »power-on« for the duration of the flight. After take-off, the FES power is enabled via a toggle switch, whereupon the FES system is ready to offer immediate thrust by rotating the knob clockwise. This knob controls the power level. Rotating anti-clockwise stops the motor. The blades are then parked automatically and the nose closes for optimal aerodynamic performance.

THE BASIC SYSTEM INCLUDES:

- Front Electric Sustainer system FES
- Two section wings and 18m Wingtips
- Integrated water tanks in the main wings
- Flaperons – full span ailerons mixed with full span flaps
- Automatic control and water system connections
- Forward hinged canopy with integrated instrument panel
- Two-lever Canopy jettison system
- Optimized energy absorbing safety cockpit
- 14Ah Battery holder in the front
- Adjustable rudder pedals
- CG Hook from TOST
- 5.00x5 wheel with hydraulic brake system, operated on airbrake handle
- Shock break system on retractable undercarriage
- Registration + contest letters (UV-resistant micro tape)
- Horizontal elevator mini tips
- Three bank air brakes suction side of the wing
- Radio antenna in the vertical fin
- Total energy tube connections in the vertical fin
- Pitot tube in the vertical fin



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M8 Medien Berlin | mail@macht.de
11/2019 | Specifications subject to change without notice.

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info@hph.cz

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) <input type="radio"/>
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