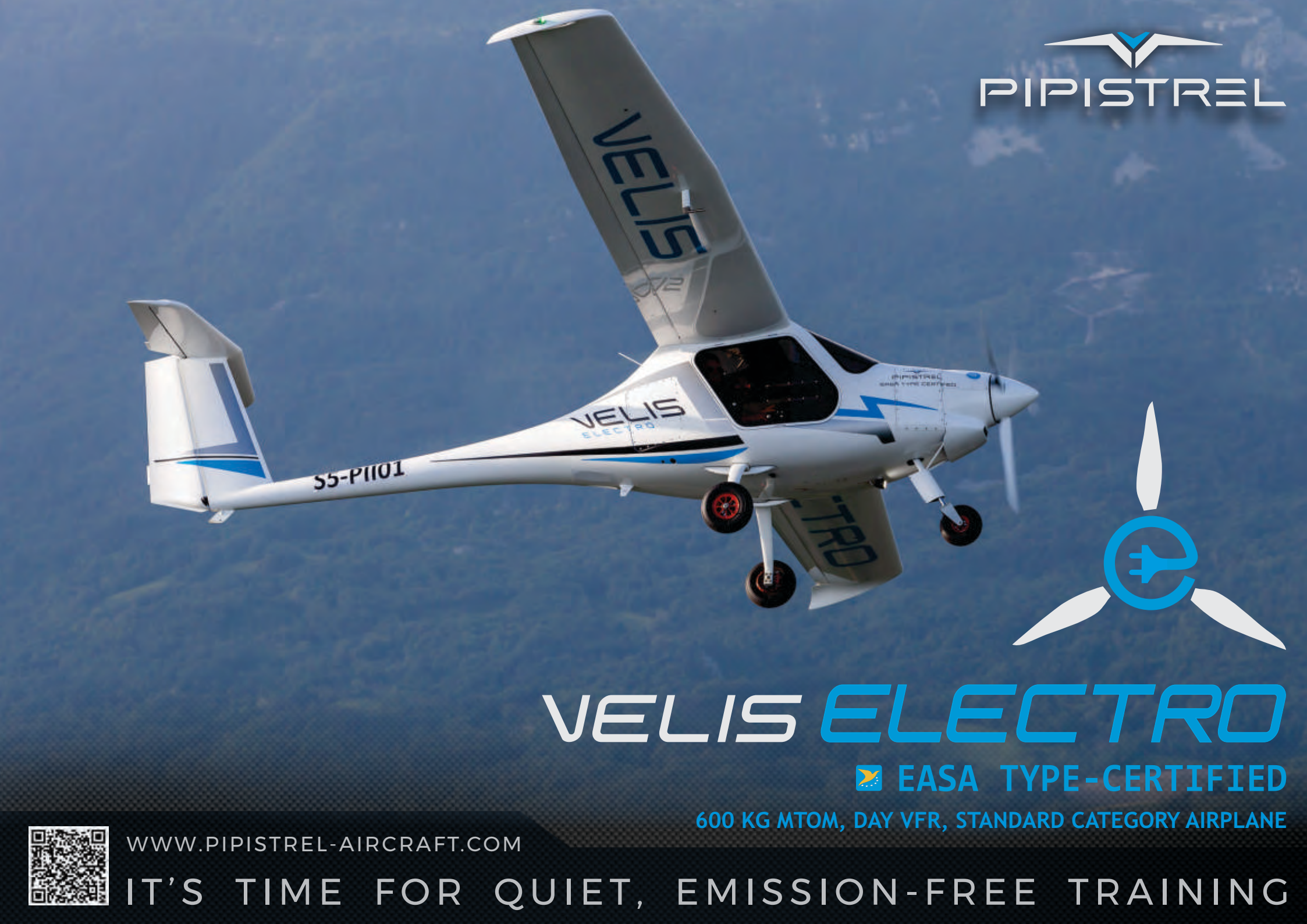
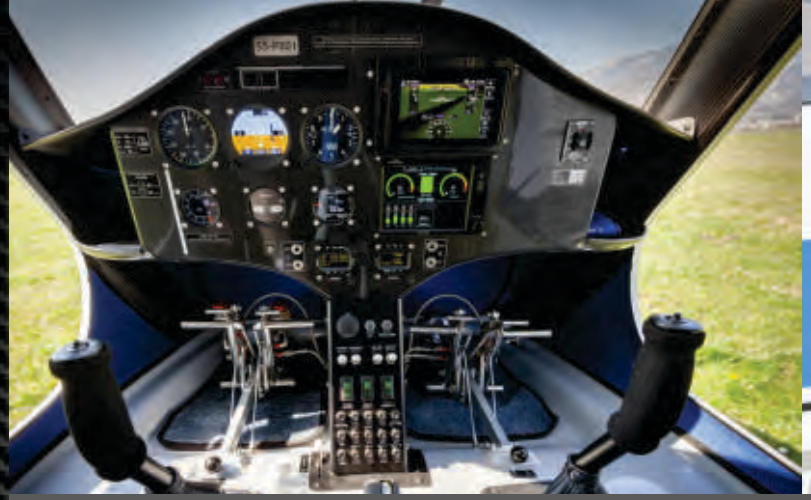
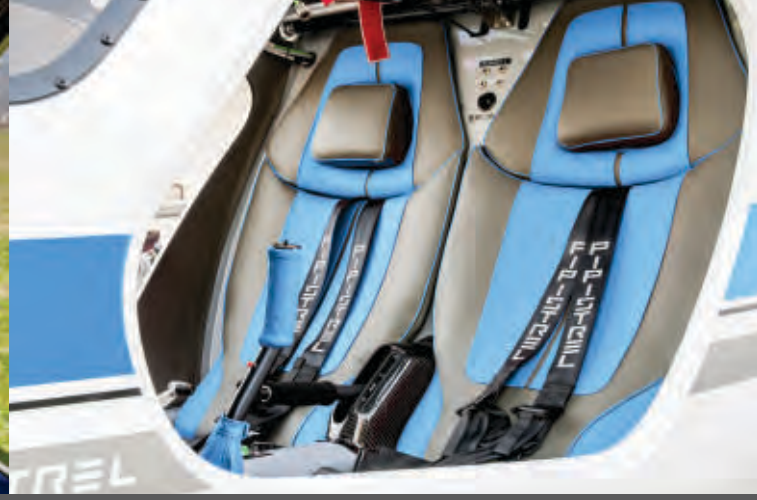

PIPISTREL
VELIS
VELIS
ELECTRO
S5-PI101
TRO
VELIS ELECTRO
EASA TYPE-CERTIFIED
600 KG MTOM, DAY VFR, STANDARD CATEGORY AIRPLANE
WWW.PIPISTREL-AIRCRAFT.COM
IT'S TIME FOR QUIET, EMISSION-FREE TRAINING

VELIS Electro

World's first Type-Certified electric aircraft

The two-seater, intended primarily for pilot training, is a game-changing aircraft in terms of technological innovations and cost-efficiency. VELIS Electro can be operated commercially and is fully approved for pilot training as well as other operations. Featuring noise levels of only 60 dBa, and produces no combustion gases at all. With its quietness, VELIS Electro can bring flying much closer to urban areas without upseting the quality of life.



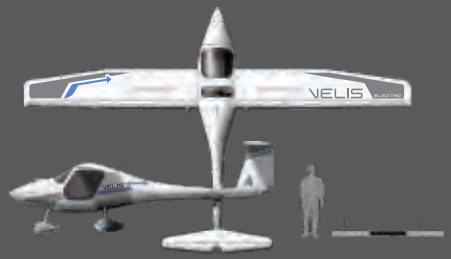


VELIS Electro is equipped with a Pipistrel type-certified 57.6kW liquid cooled electric engine, which provides power to the aircraft and produces no combustion gases at all, and Pipistrel's three-bladed fixed pitch composite propeller.

As the fundament of VELIS Training System, the VELIS Electro was designed to be simple to operate and maintain, without compromising safety. Employing Pipistrel's type certified electric engine, the VELIS Electro delivers power instantly, using a simplified user interface in a cockpit that maintains the same look-and-feel of its conventionally powered siblings. The reduced number of moving parts greatly decreases maintenance costs. Risk of malfunctions is minimized thanks to its built-in continuous health-monitoring system. This enhanced reliability allows the VELIS Electro to have more than double the lifespan of powertrain elements in comparison to the previous generation of electric aeroplanes.

Economy and safety

The power is delivered by 345 VDC electric system built around a liquid-cooled in-house developed high performance system of two batteries connected in parallel, installed in a redundant 2-unit arrangement, total nominal capacity 24.8 kWh. Thermal runway inhibiting, crashworthy, HIRF/EMI tolerant. One battery pack is located in the nose of the aeroplane and the second behind the cabin. This ensures redundancy of the power source: in case of battery failure, the mal-functioning battery gets automatically disconnected from the system. A single battery is capable of full operation and has enough power to support climbing and continuation of flight. Batte- ries can be charged via an onboard charging port using a Pipistrel electric charger. The whole operation is overseen by the Main computer, displaying the status of all systems on Pipistrel EPSI 570C. Its revolutionary powertrain is entirely liquid cooled, including the batteries, and proved the ability to withstand faults, battery thermal runaway events and crash loads as part of the certification process. Velis Electro can operate in cold, hot and rain. The liquid-cooling system consists of a radiator and two electrically driven pumps installed in series, located behind the rear battery pack. An air inlet for the radiator is located on left side of the fuselage and the warm air leaves at the bottom. Two high power axial fans are installed behind the radiator in order to allow battery cooling during charging. The fans are automa- tically controlled and monitored by the BMS for seamless operation. Unlike a start-up procedure of a conventionally powered airplane, the Velis Electro is powered-up by four switches and requires no warm up time before take-off. This para-digm shift coupled with unprece-dented quietness both inside the cockpit and from the outside, the Velis Electro truly is a game-changing aircraft to revolutionise your organisation and empower a new generation of aviators.



Timeline of Pipistrel's contribution to electric flight

Taurus Electro
world's first two seat electric aircraft

Taurus G4
world's first four seat electric aircraft

Taurus Electro G2
second generation of the Taurus Electro

Alpha Electro
the new electric trainer

Hy4 - H2fly/DLR
first 4-seat aircraft powered by hydrogen fuel cells

EU Project Hypstair
200kW serial hybrid electric powertrain for general aviation

E-811 electric engine
first electric engine, Type-certified for use in aviation

Velis Electro
the first EASA Type-certified electric aircraft

EU Project MAHEPA
in-flight demonstrations of two hybrid-electric aircraft

2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021

Learn to fly on the **VELIS Electro** and experience the **future of flying** first hand - now!

Pipistrel Training Solutions

Pipistrel offers a broad portfolio of training solutions, ranging from cloud-based, multiplatform computer based training theory courses, training sessions, simulator, electric-powered trainers, IFR equipped trainers, aircraft approved for intentional spin and upset-prevention-and-recovery training and more.
Our solutions and aircraft are used for training pilots in environments which range from small aeroclubs, through to flight schools focusing on training commercial pilots, as well as in demanding circumstances of integrated air-force training systems.
Any combination of Pipistrel's Training Solutions provide best value and a clear competitive advantage to you as the provider of pilot training.

Design loads

+4 G, -2 G. All parts have been tested to a minimum safety factor of 1.875, meaning they were subjected to a load of at least 7.5 G during testing.

Structure

The structure of the **Pipistrel VELIS Electro** aircraft utilizes composite technologies introduced by Pipistrel in 1995. The entire structure is made from **composite materials** utilizing predominantly carbon fiber, Kevlar and fiberglass in different areas.

Weights

The maximum take-off weight for the Pipistrel VELIS Electro is 600 kg (1320 lbs) with the Empty weight with batteries of 428 kg (941 lbs) and Payload of 172 kg (378 lbs).

Engine

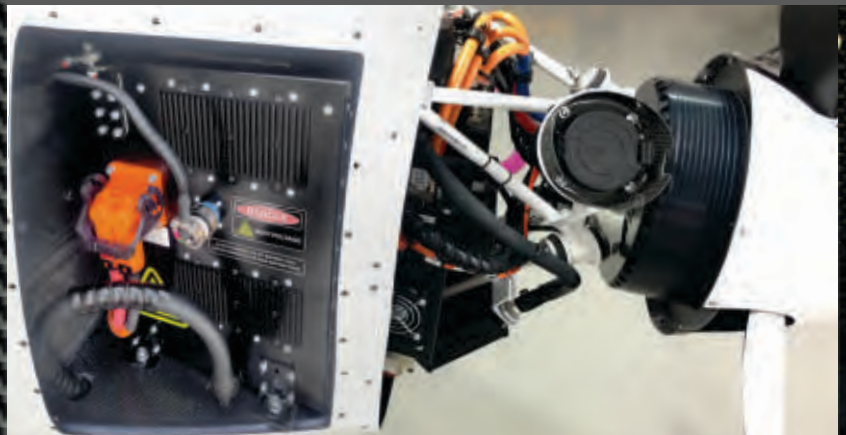
Pipistrel E-811 EASA Type Certified according applicable airworthiness code based on CS-22 (Amendment 2) Subpart H engines and CRI T-01 and batteries according to DO-311 A.

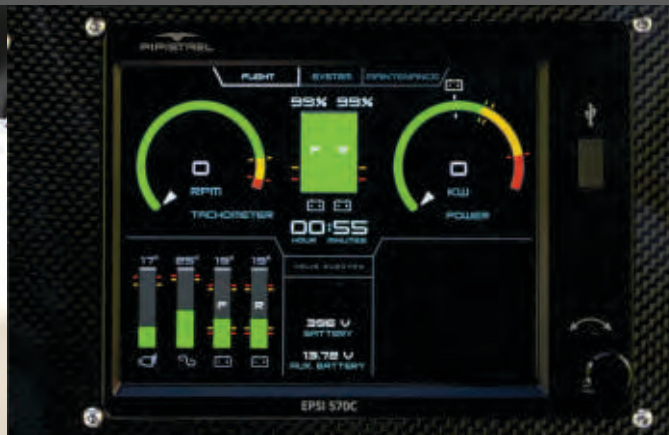
Easy to check:

-motor
-controller
-batteries
-status of the coolant

Advanced MFD

The 5.7 inch LCD cockpit display presents the state of the electric propulsion system, using intuitive graphics to display all relevant parameters.





VELIS Electro
10.71m (35'1" ft) wingspan

ALPHA Electro
10.5m (34'4" ft) wingspan

ALPHA Trainer
10.5m (34'4" ft) wingspan

TAURUS Electro
15m (50 ft) wingspan

TAURUS M
15m (50 ft) wingspan

SINUS
15m (50 ft) wingspan

VIRUS 912
12.5m (42 ft) wingspan

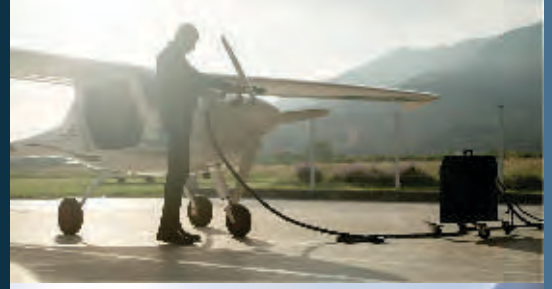
VIRUS SW
80 / 100 / 100is / 914
10.71m (35'1" ft) wingspan

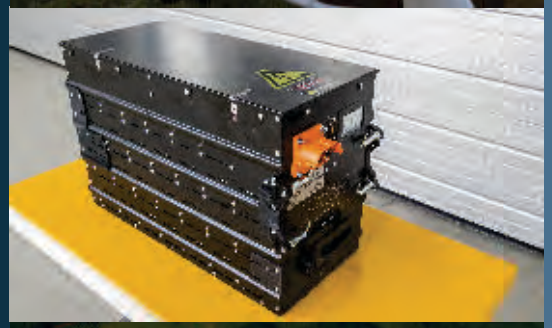
VIRUS SW 121 EASA TC
10.71m (35'1" ft) wingspan

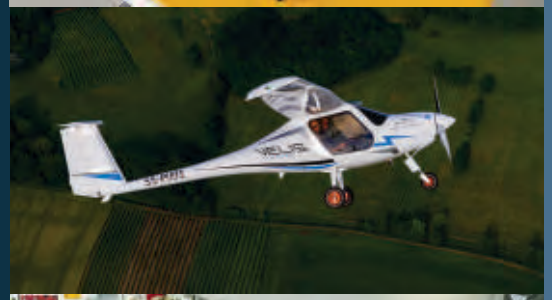
VELIS Electro EASA TC
10.71m (35'1" ft) wingspan

PANTHERA 540
10.9m (35'8")

All Pipistrel products are designed and manufactured in our 100% eco-friendly facility and follow our ECOlution concept.







Technical data

Engine

engine type	Pipistrel E-811 EASA Type-Certified
max power	57.6 kW MTOP

Propeller

Pipistrel P-812-164-F3A Certified fixed-pitch composite three-blade, 1.64 m diameter

Dimensions

wing span	10.71 m (35' 1")
length	6.47 m (21' 3")
height	1.90 m (6' 23")
wing area	9.51 m² (102.4 sqft)
aspect ratio	12.04
positive flaps	0° (0), 8° (+1), 19° (+2)
centre of gravity	24% - 32.4% MAC

Weights

basic empty weight - with batteries	428 kg (941 lbs)
max take-off weight (MTOW)	600 kg (1320 lbs)
Payload	172 kg (378 lbs)

Performance

Data published for 600 kg MTOW (1.320 lbs). All speeds in Knots

stall speed with flaps	45 KCAS
stall speed without flaps	51 KCAS
cruising speed (35 kW)	90 KCAS
maximum horizontal speed at sea level	98 KCAS
VNE	108 KCAS
max speed with flaps (+2)	65 KIAS
manoeuvring speed	100 KIAS
best climb speed	75 KIAS
max climb rate	3,3 m/s (647 fpm)
best glide ratio speed	64 KIAS
best glide ratio	15:1
take-off run - grass/asphalt	246/241 m (807/791 ft)
take-off over 50' obstacle - grass/asphalt	453/409 m (1.486/1.342 ft)
service ceiling	3.660 m (12.000 ft)
endurance	up to 50 minutes (plus VFR reserve)
max load factor permitted @ (1.875)	+4g -2g
design safety factors & tested	minimum 1.875

Note: Data is for ISA sea-level conditions. Pipistrel reserves the right to revise this data sheet whenever occasioned by product improvement, government/authority regulations or other good cause.

CONTACT YOUR LOCAL DEALER

PIPISTREL

With the ever growing cost of fuel it is time to rethink pilot training. Our solution is the first practical all-electric trainer!

Technologies developed specially for this aircraft cut the cost of ab-initio pilot training by as much as 70%, making flying more affordable than ever before.

Pipistrel is a world leading small aircraft designer and producer, specialized in electric-powered aircraft. Revolutionizing aviation since 1989, Pipistrel is proud to have gained significant international reputation with passionate customers on all continents.

- First to fly an electric two-seater in 2007 NASA Green Flight Challenge
- Winner in 2011 with an electric four-seater
- Produced more than 2200 aircraft to-date.

Pipistrel operates as a corporation in Slovenia, Italy and China, with capability of bringing a new aircraft design concept from a basic idea into a certified design ready for production.

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