



## AIRCRAFT INFORMATION

# Pipistrel Virus

80 HP (Rotax 912 UL2)





### **Introduction**

This document is published for the purpose of providing general information about the Pipistrel Virus Aircraft. Distributors/promoters and customers should familiarize themselves with this document to assist in their evaluation of this aircraft.

Should more information be required, please contact

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This document has been produced for the Pipistrel Virus Aircraft in May 2012. With the ongoing development of the aircraft Pipistrel reserves the right to revise this document whenever occasioned by product improvement, government/authority regulations or any other good cause.



### General Description

All information herein applies to the Pipistrel Virus aircraft fitted with the Rotax 80 HP engine. The Pipistrel Virus aircraft is a pre-molded, composite built, two seat, single engine, high wing, tricycle design, high performance and very economical Light Sport Aircraft (LSA). The aircraft is targeted to recreational flyers looking for a fully featured aircraft at very reasonable pricing but has also found acceptance in flying schools and the training market looking for a very easy to operate, low cost and independent soaring solution.

The Virus is similar to the Sinus range except its wingspan, at just under 41 ft (12.46 m), is smaller than the Sinus and this makes the aircraft fly faster with the compromise being a reduced glide ratio. Powered by the 80hp Rotax 912 4-stroke engine and available as a ready-to-fly aircraft or as a kit in LSA, Ultralight or experimental categories in most world markets

### Basic Information

Virus	Dimensions
wing span	40 ft 10 inch (12.46 m)
length	21 ft 3 inch (6.50 m)
height	6ft (1.82 m)
wing surface	118 sqft (11.00 m <sup>2</sup> )
vertical fin surface	12 sqft (1.1 m <sup>2</sup> )
horizontal stabilizer and elevator surface	17.5 sqft (1.63 m <sup>2</sup> )
cockpit width	44" (1.12 m)
aspect ratio	13.1
Flaperons positions	-5°, 0°, +9°, +18°
centre of gravity (MAC)	20% - 38%
propeller	Pipistrel Vario or 2 position propeller



### Weights, center of gravity and fuel information

The design maximum takeoff weight for the Pipistrel Virus aircraft is 1212 lbs (550 kg) with around 562 lbs (255 kg) useful load and the fuel capacity is 25 US gallons (100 liters) when fitted with the optional long-range fuel tanks.

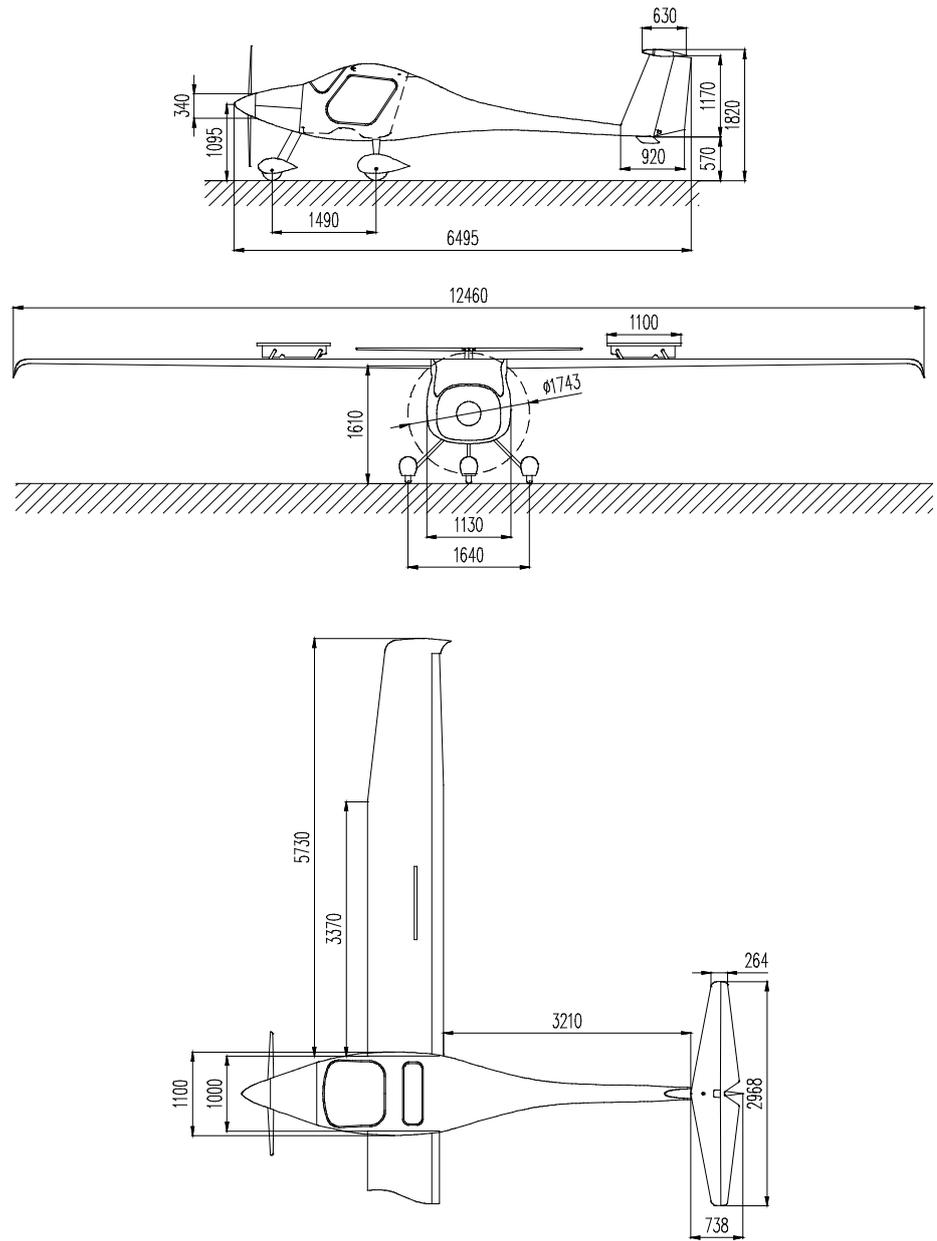
<b>Virus</b>	<b>80 hp Rotax 912</b>
maximum takeoff weight	1212 lbs (550 kg)
maximum landing weight	1212 lbs (550 kg)
typical empty weight	650 lbs (295 kg)
payload without fuel	562 lbs (255 kg)
payload with full fuel (25 US gal/100 l)	404 lbs (183 kg)
baggage allowance, maximum (baggage area floor limit)	55 lbs (25 kg)
baggage allowance, typical with full fuel	55 lbs (25 kg)
fuel capacity, total (long range tanks)	25 US gal (100 l)
fuel capacity, usable	24.5 US gal (98 l)
fuel weight full	159 lbs (72 kg)
endurance with 30 minutes reserve	6.8 hours
fuel flow at cruise speed	3.3 US gph (12.5 l/h)
range at cruise speed excluding reserve	795 NM (1470 km)
takeoff - ground roll - at MTOM	500 ft (152 m)
takeoff total distance over 50 ft obstruction at MTOM	825 ft (252 m)
landing distance over 50 ft obstruction	825 ft (270 m)
absolute ceiling at MTOM	17,200 ft (5250 m)

### 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.

## 3-view drawing

Showing the Pipistrel Virus in Nose Wheel (tricycle) configuration, dimensions are in mm.





## Performance

Data published here is for take-off weight of 1290 lbs (585 kg), ISA conditions at sea level.

	Velocity	IAS kts (kmh)	Remarks
<b>VS</b>	Stall speed clean	<b>42 (78)</b>	Stall speed flaps up
<b>VSO</b>	Stall speed landing configuration	<b>36 (67)</b>	Stall speed flaps full
<b>VFE</b>	Max. speed flaps extended	<b>70 (130)</b>	Do not exceed this speed with flaps extended (+15, +25 degrees)
<b>VA</b>	Design manoeuvring speed	<b>76 (141)</b>	Do not make full or abrupt control movements above this speed
<b>VNE</b>	Velocity never to be exceeded	<b>135 (249)</b>	Never exceed this speed in any operation
<b>VNO</b>	Velocity for normal operations	<b>76 (141)</b>	Maximum structural cruising speed in turbulent air

## Airspeed indicator markings

MARKING	IAS [kts (km/h)]	Definition
White band	36 - 70 (67 - 130)	Full Flap Operating Range. Lower limit is the maximum weight VSO in landing configuration. Upper limit is maximum speed permissible with flaps extended
Green band	42 - 76 (83 - 141)	Normal Operating range lower end is maximum weight VS1 at most forward C.G. with flaps retracted. Upper limit is maximum structural cruising speed
Yellow band	76 - 135 (141 - 249)	Maneuver the aircraft with caution in calm air only
Red line	135 (249)	Maximum speed for all operations. VNE
Blue line	70 (130)	Best climb rate speed ( $V_y$ )

## What is new?

The Pipistrel Virus was the second release in the Pipistrel family of aircraft; introduced at Aero Friedrichshafen in 2001 it has been a huge success with more than 500 of the Sinus/Virus family of aircraft delivered.

The Pipistrel Virus aircraft has evolved over the years using the Rotax 912 engine. Whilst the airframe has basically stayed the same there have been modifications to the aerodynamics and flutter resistance as well as instrument panel, ergonomics and safety features.

## Geometry

The Virus is a 40 ft (12.46 m) wingspan, two-seat T-tail motorglider made almost entirely of composite materials. Its low-drag, high-wing-monoplane, engine-at-the-front construction makes it efficient even when flying at high speeds.

The main landing gear is aerodynamically profiled and made of composite materials. The main wheels have strong hydraulic disk brakes and the tail wheel or nosewheel option is directly controlled by the pedals.

The Virus features flaperons, offering 4 settings: neutral, 1st, 2nd and the negative (reflex) position. Full dual main flight control levers make the Virus ideal for initial as well as for advanced flight training. All aileron, elevator and flap controls are connected to the cabin controls using self-fitting push-pull tubes. Rudder is controlled via cables. The elevator trim is an internal mechanical, spring type.

Airbrakes are available as standard, they reduce the requirements for runways size for landing and provide for steeper approaches and expedite descents.

All Pipistrel aircraft come with H type safety belt attached to the fuselage at three mounting points. Rudder and brake pedals can be adjusted also during flight to suit your size and needs.

## Structure

The cabin is properly insulated from noise and very comfortable for even those long flights. The seats are ergonomic with an adjustable head rests. Both the pilot and passenger pedals have differential toe brakes fitted. The pedals are adjustable forward and aft in flight and are manufactured from stainless steel. All controls are easy to use and reach from both seats and dual pedals and sticks mean the aircraft can be flown from either seat.

The fuel tanks are located in the wings and have the fuel cap on top, as well as a visual check within the cockpit for the fuel level. The standard capacity is 15 gallons with a long range option increasing the capacity to around 25 gallons. The gasculator is located beneath the lower engine cover.

### **Assembly**

The Virus assembly is very simple, just like conventional gliders the wing control connections are automatically locked on connection of the wings. It takes most owners about 20 minutes to rig or de-rig the aircraft.

### **Powerplant**

The Virus is our most popular aircraft and It uses the legendary 80 hp Rotax 912, 4 cylinder 4-stroke engine (now with a 2000 TBO) which allows the Virus to become a 'super sophisticated' motorglider just like the 'real ones' but at a 1/3 of the price. If you want to spoil yourself and your passenger, the Rotax 912 is the engine of choice for the vast distances we travel.

## **Frequently Asked Questions (FAQ)**

This section is an attempt to sum up various questions people may have about the Pipistrel Virus Aircraft.

### **What is the width of the cabin?**

43.3 inch

### **What is the weight / fuel consumption penalty for the nose wheel version?**

The nose wheel version adds 16 lbs in empty weight and increases the fuel flow by 0.4 gph at cruise speed.

### **Is there a parking brake?**

The parking brake is available as an option together with Beringer high performance tires and wheel brakes.

### **What is the typical baggage allowance?**

Baggage safely fits in the solid luggage compartment behind the seats, which is easily accessible. Baggage allowance varies upon the level of equipment, etc. and can be calculated for each individual aircraft using the formulas in Flight manual and Maintenance manual, Section Weight and Balance. However, typical values for the Virus are 60 lbs for aircraft without the rescue system and 29 lbs when the rescue system is installed on board.

### **Is there a side luggage access door?**

The side luggage access door is available as an option and provides easy and direct access to the luggage area from the outside. It features a lock so all your items inside will be safe. For much larger objects, the access to the luggage compartment is through the cabin - the seats fold in seconds and this provides a large opening and additional access to the luggage compartment.

### **Can you fly without the door for aerial photography?**

Yes. You can remove one door completely, whereas the other door must be in place, closed and locked. With this configuration there are no extra airspeed restrictions, however the maximum recommended airspeed is 108 kts. Removing the door is a simple and quick procedure and only requires two safety pins to be removed.

### **Can I do aerobatics, spins in the Virus?**

The design basis of the Virus follow the strictest EASA CS-22, CS-VLA and LTF-UL (sections) certification standards, as well as their FAA LSA rules. The Virus is a high-performance airplane and not suitable for aerobatics, despite the +4 G, -2 G allowable loads. Pipistrel cannot prevent people doing aerobatic maneuvers in the aircraft, but we do not approve it - the reason is in aerodynamics. The Virus has so little drag that it picks up speed MUCH quicker than other aircraft. This can be dangerous in aerobatic maneuvers (also spins, which are completely recoverable) and an average pilot can very quickly overstress the airframe because of airspeed. The aircraft can reach 145 kts in a dive in a matter of seconds! But flown correctly it is a very safe and forgiving aircraft.

### **Exterior paint**

The paint used is a special acrylic based pigment, which is applied during the molding process. Pipistrel aeroplanes are not after-painted like most other aeroplanes - instead, paint is applied onto/into the structure while molding. This makes the paint much more durable and resistant to UV light and environmental contaminants. Recommendations for care and cleaning of the aircraft can be found in the Flight manual and Maintenance manual, section Handling and Maintenance, chapter Keeping your aircraft in perfect shape.

### **Is the leather upholstery offered as optional equipment true leather? What colours are available?**

Yes, we use 100% genuine NAPA leather with Bovine texture in a wide choice of colors. The customer can choose the color of the seats and surrounding upholstery (side carpets, firewall, instrument panel pockets etc.) separately. Up to two different colors per aircraft can be selected, for example: Red seats with Vanilla interior.

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