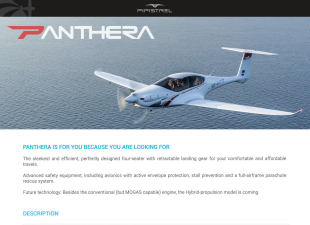
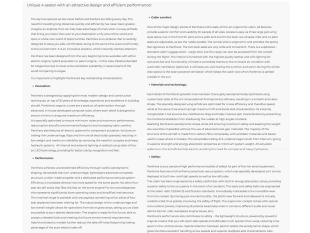


PANTHERA



PANTHERA IS FOR YOU BECAUSE YOU ARE LOOKING FOR

The sleekest and efficient, perfectly designed four-seater with retractable landing gear for your comfortable and affordable travels.

Advanced safety equipment, including avionics with active envelope protection, stall prevention and a full-airframe parachute rescue system.

Future technology: Besides the conventional (but MOGAS capable) engine, the Hybrid-propulsion model is coming.

DESCRIPTION

Unique 4-seater with an attractive design and efficient performance!

Thriving manoeuvre up the most faithful and flexible as he's joyously sky. His sensitive and responsive controls make him a delight to fly, whether you're cruising on a serene river or fully exploiting the limits of his nimble airframe, that firmly you'll learn that next to your destination is why various online courses and tutorials are available to help you get the most out of your aircraft. Panthera is the ideal companion for both the experienced pilot and the aviation enthusiast. It is an innovative airplane, which instantly catches attention.

Panthera has been designed from the very beginning to be available with a choice of electric engine, hybrid-propulsion or gasoline engine. Unlike many Western-designed aircraft, Panthera has been designed for availability in every corner of the world and not having to forget.

Also important is longlife. Furthermore any outstanding characteristic:

- **Innovation**

Panthera is designed by applying the most modern design and construction methods, on top of 20 years of knowledge, experience and expertise in building composite aircraft. Panthera is a result of a continuous development and advanced, innovative technologies, where each detail is designed to provide maximum strength and minimum weight.

Panthera is a result of a continuous development and advanced, innovative technologies, where each detail is designed to provide maximum strength and minimum weight. Panthera also features all-electric systems for environmental control, flight control, fuel management, and maximum reliability by removing the need for complex hydraulic hardware systems. All-internal and external lighting is realized using only diffuse, yet LED technology provides the perfect lighting in every flight condition.

- **Performance**

Panthera achieves unprecedented efficiency through careful consideration to shaping, renewable fuel fuel, undercarriage, lightweight structure and complete aerodynamic refinement. Panthera's high-performance wing, with its laminar flow efficiency, is completely devoid of control surfaces. All control surfaces are located on the trailing edge of the wing, which is the most efficient location. Panthera also features an all-electric fly-by-wire flight control system, which is the most advanced system available in the aviation industry today. The system is designed to provide the pilot with the ultimate flying experience, while at the same time ensuring the safety of the aircraft and its occupants.

- **Cabin comfort**

Most of the major design centres of the Panthera are made of the all-composite cabin, all-between provide a superior comfort not available for aircraft of all sizes. Access is easy via three large gull-wing doors, which provide unobstructed entry to the cabin. Inside the cabin, there is room for four adults, as well as the utility baggage. The comfort and ergonomics will provide the quality feel signature to Panthera. The two seats are very wide and not cramped. There are a substantial amount of leg room and head room, even for the taller occupants. Cabin noise is kept to a minimum during the flight. The interior is furnished with the highest quality leather and the lightest but exceptional and functionality. Climate is controlled thanks to the onboard air conditioner with automatic temperature control. In all the cabin, the environment is enhanced during the cruise by the active noise and vibration system which keeps the cabin and others Panthera is spoken comfortable in the air.

- **Materials and technology**

Every aspect of the Panthera greatest has been thoroughly carefully and tested with only conformed state of the art composite and fluid dynamics software, resulting in a smooth and clean shape. The carefully designed wing airfoils are optimized for cruise efficiency and Panthera speed, while at the same time ensuring high maximum lift and docile stall characteristics. As a result, Panthera's stall characteristics are very benign, with no tendency to drop a wing, thus minimizing unwanting and unexpected manoeuvres. Panthera's wing is designed with a high degree of natural stability, and the wing is also equipped with a large amount of built-in dihedral, which provides a high degree of roll stability and keeping the aircraft into excellent flyability without the use of advanced auto-pilot. Likewise, the tapering of the wing ensures that the stall will always occur at the wing root before the wingtips, thus ensuring that the ailerons remain effective. This unmistakable tapering is a natural result of the aircraft's high-efficiency wing. It creates the smallest amount of induced drag and, combined with the wing's high aspect ratio, it creates remarkable climb performance and a high cruise speed for a minimum of power. Panthera's airframe has been constructed by carefully - the lightweight structure, preventing powerful engines from the pilot on both side speeds of controls much lighter, while maintaining the good control characteristics. Panthera's control surfaces are perfectly balanced for precise handling, which is important to achieve good control characteristics. Panthera's control surfaces are perfectly balanced for precise handling, which is important to achieve good control characteristics at both maintenance, thus reducing the availability of Panthera.

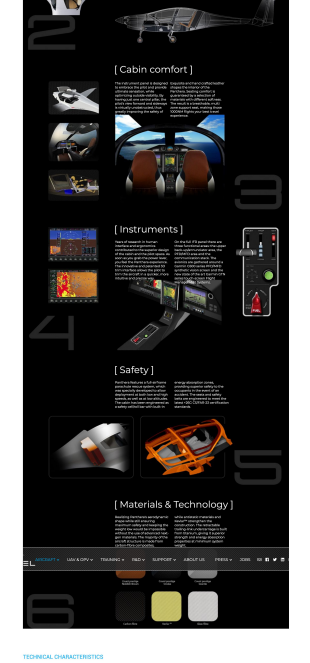
- **Safety**

Panthera is your personal high-performance basket of safety for part of the cloth and equipment. Panthera flies even in the Panthera cockpit, has an option, which has specially developed, and can be used in the event of an emergency, for the whole aircraft.

The cabin has been engineered as a safety cell that, with its energy-absorption zones, provides maximum safety to the occupants in the event of an accident. The seats' and safety belts are engineered to absorb energy in the event of a crash, thus reducing the forces transmitted to the occupants. Optional airbags are also available. Panthera's fuel tanks are located between the firewall and the cockpit, where they are protected from impact damage. The fuel tanks are flexible and elevated as virtually unbreakable fuel, thus greatly improving the safety of flight. The passenger compartment comes with special attention to the ergonomics and comfort of the occupants. Panthera's cabin is built around a rigid frame and is surrounded by a deformation zone.

Panthera's airframe has been electrically durability - the lightweight structure, preventing powerful engines from the pilot on both side speeds of controls much lighter, while maintaining the good control characteristics. Panthera's control surfaces are perfectly balanced for precise handling, which is important to achieve good control characteristics at both maintenance, thus reducing the availability of Panthera.

DISCOVER



[Innovation]

Special attention has been given to composite construction. Panthera's excellent durability is also owed to the use of composite materials. Panthera's composite structure is made of semi-monocoque construction, a structure designed to provide maximum efficiency. This structure is also known as stressed skin. In an all-composite aircraft with a stressed skin, the fuselage is the main structural element and, consequently, the most stressed.

[Configurations]

The all-composite landing gear has a fail-safe/long-life design. Each main landing gear is made from a composite leaf spring and a carbon-composite drag strut. The main landing gear is attached to the fuselage by four bolts. The nosewheel is connected to the engine firewall by a composite leaf spring and is equipped with a steerable nosewheel.

[Cabin comfort]

The high cabin crown panel is designed to embrace the pilot and provide a feeling of openness. The large, optimizing outside visibility for the pilot and passengers. The large panels have become an attractive visually pleasing cockpit, thus providing the ultimate in safety.

Ergonomic and easily accessible has been a major design objective for the Panthera cockpit. The result is a comfortable, multi-pace support seat, making these aircraft a pleasure to fly for long periods.

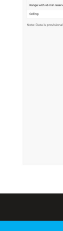
[Instruments]

Years of research in human factors engineering have been considered in the superior design of the Panthera cockpit. Cockpit ergonomics guide the pilot's hands to the switches and instruments he or she needs to use most often, and the most frequently used controls are located within primary visual scan area.

On the full IFR panel there are two primary flight displays and a basic radio/navigation area, the engine instruments are located centrally. Key avionics are gathered around a central console within easy reach of the pilot, which is shared with the front passenger. Many controls are duplicated for the front passenger.

[Safety]

Redundant, reliable airframe systems are provided throughout the aircraft, and specially developed to offer maximum safety in the event of a fault occurs. The main has been engineered as a safety cell that will result in



energy-absorption zones, complemented by a fully approved in the event of an emergency, the whole aircraft can be recovered safely to the ground. The latest ASC CLP168-23 certification standards.

[Materials & Technology]

Boasting the most aerodynamic shapes and evolving technologies, Panthera is designed to weigh the least but is possible. Panthera's all-composite airframe can maximize the capacity of the aircraft structure to reach new efficiency and performance.

while emission materials and "green" engine technologies. Panthera's lightweight structure, making the underlying basis for the aircraft's high performance, low fuel consumption and low emissions, as well as the ability to meet the latest ASC CLP168-23 certification standards.

TECHNICAL CHARACTERISTICS

MODELS

- **PANTHERA Hull-TP Hartley Flybrid** (with turbine/ gyrocopter) is in testing
- **PANTHERA Hull-TP** (with turbine/ gyrocopter) is in testing and in limited series - requires approximately 1800 hours of skilled labor)
- **PANTHERA SIXER TC** (4+2 Turbo-Combi) is in Series in 2022
- **PANTHERA WIBBS Neon FC Factory Flybrid** - under development
- **PANTHERA EAGLE FIRE FC Factory Flybrid** - under development

TECHNICAL DATA PANTHERA, PANTHERA

	PANTHERA
Material	composite/ hybrid wood
max. power	300 hp/ 736 kW
WEIGHTS AND DIMENSIONS	
max. take off mass, MTOM	1800 kg/ 3969 lb (subject to extension to 1860 kg/ 4100 lb)
useful payload	660 kg/ 1454 lb
total useful fuel	3 x 100 l/ 3 x 26.4 gal
fuel fuel payload	300 kg/ 770 lb
weight	1207 kg/ 2661 lb (est.)
wingspan	9.98 m/ 32.7 ft (est.)
height	2.70 m/ 7.9 ft (est.)
wing area	12 m²/ 129 ft²
PERFORMANCE (at MTOM)	
rate/speed (Vyse, even/climb, v_y	10 m/s	
climb speed (Vbest, even/climb, v_x	80 KIAS
manoeuvring speed, v_a	140 KIAS
never exceed speed, v_{ne}	220 KIAS
typical cruise speed at 75% power	196 KTAS (@ 7,500)
typical cruise speed at 55% power	154 KTAS (@ 9,500)
climb rate at MTOM, and v_y	5.6 m/s, 1,100 ft/min
rate of ground roll	616 m/ 1,900ft
take-off distance (50 ft obstacle)	827 m/ 2,615 ft
landing distance (50 ft obstacle)	730 m/ 2,250 ft
landing ground roll	340 m/ 1,100 ft
fuel consumption at 75% power	44 l/h, 11.6 gal/h
fuel consumption at 55% power	42 l/h, 11 gal/h
range (with 45 min reserve)	~1320 nm, 1520 SM, FL 130, 5 people aboard (~ 2.45 kg)
ceiling	7500 m/ 17,220
AVIONICS	• Garmin G3X touch with touch-sensitive PFD and MFD (Optical AOA/IAS), Garmin Voice, SVS, ADS-C module • Garmin GFC 500 2-axis GPS-coupled digital autopilot • Garmin GTN 750 Xi Touch/GNS 875 NXi, touch screen • Garmin GTN 650 Xi touch/ GNS 865 NXi, touch screen • Garmin GMC 305 Retractable Audio Panel, Intercom • Garmin GTX 345D Transponder, Mode S ES (1090) ADS-B Out • Avidyne IFD 540 ADS-B/ WAAS • Pilot-selectable Instrumentation Modular Airspeed, Backup Attitude, AHRS Air Vectors

Note: Data is for sea level, hard runway, ISA conditions. Physical reserves the right to revise this data sheet whenever accustomed by product improvements, governmental directive or manufacturing data or other good cause.

FUTURE VARIANTS

	PANTHERA HYBRID FEP	PANTHERA ELECTRIC
Powerplant	Hybrid 300 kW aero-Propulsion	Electric 300 kW aero-Propulsion
Model power	300 kW (150 kW ICE-Combi-Hybrid) Maximum Cruise power 150 kW	300 kW (150 kW ICE-Combi-Hybrid)
Weights and Dimensions		
MTOM	1.55 Kg/ 2,900 lb	1.55 Kg/ 2,900 lb
Useful payload	450 kg/ 992 lb	TBD
Total useful fuel	4 x 100 l/ 4 x 27 gal	n.A.
Full fuel payload	180 kg/ 396 lb	n.A.
Wingspan	10.36 m/ 33.9 ft (est.)	9.98 m/ 32.8 ft (est.)
Length	8.27 m/ 28.9 ft (est.)	8.27 m/ 28.9 ft (est.)
Height	2.9 m/ 9.7 ft (est.)	2.9 m/ 9.7 ft (est.)
Wing area	12.2 m²/ 131 ft²	12.2 m²/ 131 ft²
Performance (at MTOM)		
Stall speed (flaps extended)	60 KIAS	60 KIAS
Stall speed (flaps retracted)	65 KIAS	65 KIAS
Manoeuvring speed, v_a	140 KIAS	140 KIAS
Maximum structural cruise speed v_c	176 KIAS	176 KIAS
Never exceed speed v_{ne}	226 KIAS	226 KIAS
Typical cruise speed (at 75% power	177 KIAS (@ 6,700 ,flat/ geometric power)	177 KIAS
Typical cruise speed (at 55% power	145	177 KIAS
Climb rate at MTOM and v_y	5.6 m/s/ 1,100 fpm	5.6 m/s/ 1,100 fpm
Take-off ground roll	290 m	290 m
Take-off distance (50 ft. obstacle)	590 ft.	590 ft.
Landing distance (50 ft. obstacle)	590 ft.	590 ft.
Landing ground roll	290 m	290 m
Consumption at Performance cruise	TBD	TBD
Consumption at economy cruise	TBD	TBD
Range with 45 min reserve	TBD	TBD
Ceiling	TBD	TBD

Note: Data is provisional. The aircraft are under development and the parameters are subject to change.

Interior of cabin (mockup)

Field of vision