



soaring performance of the Standard Class



2016, photo: Staneklemenc, Carat archive. Technical data subject to change.

Where would you like to go?

Whether it be local soaring in ridge, wave or thermals or cross country, the Carat gets the job done in style either as a pure sailplane or as a motorglider.

This is a new breed single-seat sailplane for all reasons and seasons.

You have the option to cruise out to 637 sm at 124 kts engine on.

Or you can soar at 40 to 1 as a sailplane. It's your choice.



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Carat - a jewel with many qualities

Reliable, low-noise, four-stroke engine

You can rely upon the air-cooled, four-cylinder, four-stroke Sauer S 1800-1-ES1C engine. It has a fuel consumption of about 2.9 gph at 108 kts (10.8 l/h at 200 km/h), and is also cheap to maintain. With 13,8 U.S. gal. (53 l) unleaded premium petrol in the tank you have a range of 637 sm (1026 km) and even then there's still half-an-hour's reserve left. The carburetor adapts the mixture automatically to altitude. That's why the Carat can still climb at a rate of more than 100ft/min (0.5 m/s) and up to 300 ft/min (1.5 m/s) at an altitude of 16,000 ft (5,000 m) when the electrical fuel pump is in operation. You only have to use the throttle, choke, carburetor heat and the ignition button. Even on the hottest of days and at maximum power all operational temperatures remain within their limits thanks to a clever, low-drag, cooling air routing.

The engine purrs like a pussy-cat. With an external noise level of 62.7 dB(A), the Carat is one of the quietest aeroplanes and fulfils the requirements of increased noise protection.

Folding propeller

The new "beak" folding propeller made of glass fiber folds the blades forward against the air stream by means of two damping gas springs when the engine is shut off at speeds below 48 kts (90 km/h) thus minimizing drag. You simply switch off the ignition when you have centered a thermal. After a few seconds you have a good sailplane. Blade interconnection prevents unintentional opening. The blades have adequate freedom of movement when in operation which results in a particularly smoothly running engine.

When the engine is started, centrifugal forces open the propeller at once and it is immediately operational.



Retractable landing gear

After engaging the 3-position switch, the robust main landing gear is retracted electro-hydraulically. The fairings fit tightly and thus ensure aerodynamic performance. The landing gear can be extended manually in an emergency. Two powerful disk brakes are operated simultaneously using a brake lever on the control stick where the lock for the parking brake is also located. The production standard landing gear warning horn sounds immediately when the air brakes are deployed and the landing gear is not fully extended. The steerable, spring-loaded tail wheel allows precise taxiing and a turning radius of about 49.2 ft (15m).

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The wing, with slight modifications, is a 15-meter Schempp-Hirth Discus wing. Turbulators on the lower surface provide excellent soaring performance. Schempp-Hirth air brakes permit steep and safe landing approaches. Control harmony is perfect and the optional winglets improve thermal circling performance and L/D. Controls hook up is automatic and one man assembly is available.

Easy one-man assembly

Due to the retractable landing gear and the folding propeller, the Carat fits into a normal sailplane trailer. No expensive hangar space is required. Because of the accurate fit of the spar end guides, the wings can be fitted individually. And with the help of the optional one-man-assembly kit, you are just as fast on your own.

Automatic control connections

All the control surfaces connect themselves automatically during assembly.

The wing is secured by a permanent wing pin under the seat pan, the horizontal stabilizer by an automatic locking bolt.

Comfortable cockpit

Every pilot sits comfortably in this cockpit, even with his parachute, thanks to the roomy seat, the adjustable pedals and the adjustable seat back. Cabin heating, good air-conditioning and room for a map and snack bag ensure the pilot's well-being.

The instrument panel offers plenty of room for a good assortment of soaring and VFR equipment including Variometers/GPS, final glide computers and transponder/encoder packages.

Behind the seat there is enough space for baggage including tent and sleeping bag so you can take full advantage of the 330 lbs (150 kg) kg payload.

Technical data - Carat

Single seat, EASA Part 22 (JAR 22) certified, powered glider for soaring and fast cruising, in all glass-fiber / carbon-fiber construction with retractable landing gear and folding propeller.

Engine: Sauer S 1800-1-ES1C, four cylinder- four stroke, air-cooled, electronic dual ignition available, maximum continuous power: at:	54 hp	40 kW
Propeller: AMS AM-F3-1A/140-1, forward-folding propeller, diameter:	55 in	140 cm
Wing span:	49.2 ft	15.00 m
Length:	20.4 ft	6.21 m
Wing area:	114+ sqft	10.58+ m ²
Aspect ratio:	21.3	
Airfoil:	Discus	
Empty weight including equipment, approx.:	750 lbs	340 kg
Maximum take-off weight:	1080 lbs	490 kg
Wing loading:	7.5 - 9.1 lbs/sqft	36.8 - 44.4 kg/m ²
Limiting maneuvering load factor:	+5.3/-2.65	
Stall speed for 1080 lbs (490 kg), V _{so} :	41.5 kts	77 km/h
Maneuvering speed, V _A :	100 kts	185 km/h
Never-exceed speed, V _{NE} :	135 kts	250 km/h
Cruising speed at 75% IAS / TAS at 10,000 ft (3,000 m):	108 / 124 kts	200 / 230 km/h
Best rate of climb with max. continuous power: at:	571 ft/min	2.9 m/s
Take-off distance to clear 50ft (15.24 m) obstacle:	1496 ft	456 m
Take-off roll:	820 ft	250 m
Range, approx. 13.8 U.S. gal. (53 l), unleaded premium petrol:	637 sm	1026 km
Noise emission, according to LSL, Chap.10:	62.7 dB(A)	
Best lift/drag ratio, aerodynamically tuned and sealed, winglets, fairings: at:	57 kts	105 km/h
Minimum sink rate: at:	150 ft/min	0,75 m/s
	46 kts	85 km/h

