

C-FIFU

2023 Zenair 750 STOL

Testing and Performance Values

Warning:

The owner and operator understands that due to the inherent risks associated with flight, the safe operation of this aircraft rests exclusively with you the pilot. Mature practice of airmanship, remaining within safe flight parameters and good pilot technique must be considered at all times. Flight manoeuvres outside acceptable flight limitations can ultimately result in injury or death. Aerobatic manoeuvres in this aircraft are strictly PROHIBITED. As with any aircraft, safety depends on a combination of careful maintenance and proper flight techniques.

These performance numbers are not designed as a substitute for adequate and competent flight instruction, current knowledge of airworthiness directives, applicable air regulations or advisory circulars. It is not intended to be a guide for basic flight instruction or training. Assurance that the aircraft is in airworthy condition is the responsibility of the owner. The pilot in command is responsible for determining that the aircraft is safe for flight. The pilot is responsible for remaining within the operating limitations as outlined by instrument markings and placards.

C-FIFU is an all aluminum, 2 seat, high wing kit aircraft designed by Zenith Aircraft Company. C-FIFU is powered by a *Rotax 915is* turbo charged engine producing 135 hp (141 hp max 5 min) continuous. The propeller is a *MT 3 blade* hydraulic (governor) controlled (Stock Flight Systems) constant speed. Long range 15 gallon (60L per side) fuel tanks are located in the wings and utilize the proven Skytek / Rotec fuel delivery plumbing and 3.8L header tank design. Cowl design is by Skytek

and employs both a fibreglass nose bowl as well as sheet metal construction. Intercooler ducting, radiator attachment and engineered motor mount are of Skytek design.

Section 2 Airplane and Systems

Specifications: (Original equipment list included)

Wing Span 29ft 10in

Wing Area 144 sq.ft.

Length 21ft 10in

Horizontal Tail Span 9ft 2.5in ● with fence /extensions

Rudder Tip Height 8ft 8in

Design Gross Weight 1440lbs

Wing Loading 10 psf

Never Exceed Speed (VNE) 122mph

Fuel Capacity 30 Gal. (120 litres)

Load Factor (G) ultimate +6/-3 g

Take-off Roll 200 – 250 ft tested

Landing Roll 200 ft depending on braking capabilities

Max Cruise (Sea Level) 100mph

Range(standard miles) 500 miles

Endurance approx. 5 hours

FireWall Forward Equipment

ENGINE 4 Cylinder Horizontally Opposed – Liquid Cooled

Engine manufacturer	BRP - Rotax
Engine model	915iS3 A
Rated Horsepower	135 HP continuous (141 HP max 5 min)

FUEL Mogas 91 / Avgas 100LL

Fuel capacity	left + right tanks	30 US gal. 120 litres
	Header tank	3.8 litres
Usable fuel	left + right tanks	28 US gal. 112 litres
	Header tank	3.8 litres

OIL Aeroshell Sport Plus 4

Oil dry sump forced lubrication capacity	3.5 litres
Oil consumption	Max. 0.06 l/h (0.13 liq pt/h)

COOLANT Dex-cool antifreeze 50-50 mix

PROPELLER Constant speed

Propeller Manufacturer	MT
Model	MTV-34-1-A/178-200
Number of blades	3 blades
Propeller diameter	70 inches

SPINNER Kevlar P-1252-3

Performance / 915is / Gross Weight 1440lbs

All testing done at Vernon B.C.Airport 1141ft. MSL

This section describes operating limitations and performance numbers

Zenith 750 STOL CFIFU (1440lbs gross)

Airspeed Limitations

Speed	MPH	Remarks
V _s Max Stall Speed @ max TO weight Flaperons UP	40	
V _{so} Max Stall Speed @max TO weight Flaperons DOWN	34	Airpeed calibration varied at extreme lower speeds.
V _{FE} Max Flap Extended Speed	70	Do not exceed with flaperons extended
V _A Design Maneuvering speed	90	Do not make full or abrupt control movements above this speed.
V _{NE} Never Exceed speed	122	Do not exceed this speed in any condition.
V _C Design Cruising Speed	104	Do not exceed this speed except in smooth are conditions
V _y Best Rate of Climb	55	Flaps UP
V _x Best Angle	65	Flaps in Middle

Crosswind / wind limitations 17 mph

Load Factors (limit)

Flap UP + 6 g/ -3 g

Flap Down +2 g / 0 g

Surface Ceiling 15,000 ft.

- 1- For the requirements for a Certificate of Airworthiness, a **time to climb test** was conducted at 16C / 29.92 from field elevation.

Following a 3 minute climb at approximately 55-60 mph the height achieved was 3150 ft. At full gross the aircraft achieved a constant rate of climb of 1050 ft / minute (gross weight).

2- Cruise performance 3000 MSL was measured at 10C, 24C, 36C

10C - 4600 rpm /4.6 gph/ 90mph

24C – 5000 rpm / 5.5 gph / 90 mph

36C – 5250 rpm / 6.1 gph / 90 mph

Cruise performance 7000 MSL

24C- 5370 rpm / 7.1 gph / 90 mph (MAN 35.1 inHg)

3- CFIFU at gross, cruises between 75 – 90 mph with rpm range between 4700 – 5200 rpm. Interestingly, we found the gallon per hour rate to correspond closely to the set rpm (4700 – 4.7 gph, 5000 rpm – 5 gph etc) The hydraulic constant speed prop MT was seamless in operation. Testing acceleration in cruise from 60 mph – 90 mph were noticeably quick measured in less than 6 seconds. The flight and operational characteristics of this STOL CH 750 compared to others tested (CFRDY) are normal in all other respects. There are no “unconventional” characteristics or operations that need to be mastered. All the controls respond in a usual way within the entire range of operations of the airplane.

4. At stall speeds the aircraft simply “mushes in” at stall. The airplane has a high sink rate with full flaps. With power, the indicated stall speed is below any accurate indication as nose attitude is very high. Stall occurs around a jogging speed preceded by substantial buffet. The nose will porpoise before dropping. **Oil canning sounds will commence as the aircraft reaches stall speeds. THIS IS NORMAL**

Take-off distance

Hard Surface/Flaps Up/ Ground run

Sea Level	3,000 Density Alt	6,000 Density Alt
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200 - 250 ft	300 ft	400 ft
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Over 50 ft obstacle

325 ft	420 ft	600 ft
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Landing distance

Landing distance over a 50 ft obstacle is 400 ft (ground roll 200 ft)

Service ceiling

15000 feet density altitude at gross weight.

Fuel consumption

(Rotax 915iS)

Take-off power 9.7 GPH

Cruise settings ie Eco 85% 4.6 GPH

Range and endurance

80 % Power = 500 sm 5 Hours (approx.)

Above values are without reserve.. and include some throttle management

Before attempting cross-country flights, test for fuel consumption and capacity.

Weight & Balance CFIFU

Operating weights

Empty weight	926 lbs
Maximum weight	1440 lbs
Maximum Baggage Area weight)	40 lbs
Useful load	514 lbs
Datum Line	Front edge of slots
CG at empty per W&B	10.59 "
Loaded center of gravity operating range	fwd: 11" rear 20"

