

Prezes Urzędu Lotnictwa Cywilnego
President of the Civil Aviation Authority

ŚWIADECTWO UZNANIA ZATWIERDZENIA TYPU
Type Approval Recognition Certificate

NUMER: UL.A.00 – 005/2023
Reference:

Niniejsze świadectwo uznania zatwierdzenia typu zaświadcza, że określony typ/model ultralekkiego statku powietrznego został uznany za akceptowalny w Rzeczypospolitej Polskiej zgodnie z obowiązującymi przepisami polskiego lotnictwa cywilnego i pozostaje w mocy przez czas nieokreślony, chyba że zatwierdzenie zostanie zrzucone, zawieszono lub cofnięte oraz że został wpisany na listę typów zatwierdzonych prowadzoną przez Prezesa Urzędu Lotnictwa Cywilnego, o której mowa w przepisach wydanych na podstawie art. 33 ust. 2 i 4 ustawy – Prawo lotnicze (Dz.U. z 2022 r. poz. 1235, 1715, 1846, 2185 i 2642).

This Type Approval Recognition Certificate certifies that the ultralight aircraft type/model specified has been found acceptable in Republic of Poland in accordance with the applicable Polish Civil Aviation regulations and shall remain as such for an unlimited duration unless the approval is surrendered, suspended or revoked and has been entered on the list of approved flying device types managed by the President of the Civil Aviation Authority, referred to in the regulations issued on the basis of Art. 33 para 2 and 4 of the Aviation Law Act dated July 3rd, 2002 (JL. 2022, item 1235, 1715, 1846, 2185 and 2642).

Państwo projektu
State of Design

Czech Republic

Państwo produkcji
State of Manufacture

Czech Republic

Posiadacz zatwierdzenia typu
Type Approval Holder

Zall JIHLAVAN airplanes s.r.o.
Znojemska 64, 586 01 Jihlava, Czech Republic

Wytwórca
Manufacturer

Zall JIHLAVAN airplanes s.r.o.
Znojemska 64, 586 01 Jihlava, Czech Republic

Oznaczenie typu produktu
Product Type Designation

JA-400 (Skyleader 400)

Numer zatwierdzenia typu
Type Approval Number

ULL 01/2017

Arkusz danych do zatwierdzenia typu
Type Certificate Data Sheet

ULL 01/2017

Przyjęte wymagania techniczne
Type Certification Basis

UL 2 – Part I, issue I 2019

Uwagi
Remarks

Approved by LAA CR the Technical Commission on:
06.10.2017 for MTOM 450 kg / 472,5 kg
Supplement "a": 09.06.2020 for MTOM 600 kg
Supplement "b": 22.09.2021 – fuel tanks 2x60 l
EZD ref. LTT-4.5460.3.2023

Z upoważnienia Prezesa Urzędu Lotnictwa Cywilnego
On behalf of President of the Civil Aviation Authority

Marcin Perkowski

Zastępca Dyrektora Departamentu Techniki Lotniczej
Deputy Director, Aviation Technical Department

(pismo zostało wydane w postaci elektronicznej
i opatrzone kwalifikowanym podpisem elektronicznym)
*(the letter was published in electronic form
and signed with a qualified electronic signature)*

Data pierwszego wydania: **09.02.2023**

Date of original issue:

Data ostatniej zmiany: --

Date of last revision:



CZECH REPUBLIC
Letecká amatérská asociace ČR – Light Aircraft Association of the Czech Republic

Type Certificate

Issued by the Light Aircraft Association of the Czech Republic (hereinafter LAA CR), based on the authorisation by the Ministry of Transport according to Act No.49/1997 Coll., on civil aviation, and on the Act No. 455/1991 Coll., as amended on engaging in trade (The Trades Licensing Act),.

Aircraft type designation:

Two-seat, single-engine, aerodynamically controllable, all-metal cantilever low-wing monoplane, ultra-light airplane – Sport Flying Equipment,
Type designation: **JA-400** trade name **SKYLEADER 400**
Maximum take-off mass 450 kg. Maximum take-off mass may be exceeded by the mass of the integrated rescue system, to the limit 472.5 kg.
Detailed Technical Specification is stated in the Type Certificate Data Sheet.

Supplement a) **Maximum take-off mass increased to 600kg.** UL airplane meets the requirements of the regulation UL-2 part I., (issued 01.2019).

Supplement b) **Wing tanks 2x60l**

Type certificate holder:

ZALL JIHLAVAN airplanes s.r.o.
Znojemská 826/64 586 01 Jihlava IČ 269 59 160

Approved by the LAA CR Technical commission on:

06.10.2017 for MTOM 450 (472,5) kg
09.06.2020 for MTOM 600 kg

Type certificate is registered at LAA CR under the registration:

ULL 01 / 2017

Supplement „a“ 09.06.2020 – increase MTOM to 600 kg
Supplement „b“ 22.9.2021 – fuel tanks 2x60l

LAA CR Chief Technical Inspector:

Ing. Petr Tax TEL.: 242 403 587

Letecká amatérská asociace ČR
Ke Káblu 289
102 00 Praha 10



Number of Type certificate: ULL – 01 / 2017
Type certificate holder: ZALL JIHLAVAN, airplanes s.r.o.
Type: JA-400
Business name: Skyleader 400
Date of issue: 15. 10. 2017
Supplement "a": 30.06.2020 increase of MTOM to 600kg
Supplement "b": 22.9.2021 fuel tanks (2x60l)

TYPE CERTIFICATE DATA SHEET No. ULL 01 / 2017

I. General information

- Type name:** JA-400 (business name Skyleader 400)
- Category:** Sport flying equipment, ultralight airplane aerodynamically controlled
- Type certificate holder:** ZALL JIHLAVAN airplanes, s.r.o.
Znojemská 64
586 01 Jihlava
Czech Republic
- Manufacturer:** see Type certificate holder
- Valid date:** 06.10. 2017 for MTOM 472,5kg
09.06. 2020 for MTOM 600kg (supplement "a")
22.9.2021 fuel tanks (2x60l) (supplement "b")

II. Regulations basis

1. Requirements of airworthiness:

- for MTOM 472,5kg: UL 2-part I., Airworthiness requirements for the aerodynamically controlled Ultralight airplanes, modified wording from 17.10.2002.
- for MTOM 600kg: UL 2-part I., Airworthiness requirements for the aerodynamically controlled Ultralight airplanes, issued 01. 2019.

2. Special conditions: None

3. Exceptions: None

III. Technical data, performances and operation limits.

1. **Type definition:** Type is defined with Type certificate of airplane JA-400 and general drawing n. 400 800 JA-400. The aircraft meets the requirements of the regulation UL 2-part I., issued 01. 2019.
2. **Technical description:** JA-400 is a two-seater, all-metal, cantilever, low-wing aircraft with side-by-side seats. Supporting surfaces are with two spars. They are composed of a rectangular centresection and a trapezoidal outer wing with slotted flap. There are two fuel integral tanks in the front part of the wing. The plane has a fixed tricycle landing gear, with a steerable nose wheel. There are hydraulic brakes on main wheels. The aircraft is equipped with an integrated rescue system as standard.
3. **Equipment:** For issuing the certificate of registration of airworthiness must be installed basic avionics on each plane, corresponding with requirements of airworthiness mentioned in chapter II. Specification Basis.
Detailed list of optional equipment is stated in Aircraft type design. Optional equipment installed in plane on basis of customer's requirement is listed (by serial number) in the Aircraft log-book, chapter 1.2. Equipment.

4. Basic technical data

Wing span.....	9,16 m
Length.....	6,39 m
Height	2,36 m
Wing area	11,28 m ²
Depth of the mean aerodynamic chord	1,29 m
Wing aspect ratio.....	7,43
Wing profile - root.....	GA(W)-1 - 17 %
Wing profile - tip.....	GA(W)-2 - 13 %
Flaps area.....	0,7 m ²
Length flaps.....	1,8 m
Deflections of flaps:	
Deflections take – of.....	10° ± 2°
Deflections landing.....	35° ± 2°
Ailerons area	0,55 m ²
Length ailerons.....	1,63 m
Deflections of ailerons up	24° ± 1°
Deflections of ailerons down.....	16° ± 1°
Elevator span	2,95 m
Elevator area.....	2,28 m ²
Deflections of elevator up	33° ± 2°
Deflections of elevator down	28° ± 2°

Rudder area 1,08 m²
 Deflections of rudder left 28° ± 2°
 Deflections of rudder right 28° ± 2°

 Landing gear gauge 1,96 m
 Landing gear wheel base 1,74 m
 Dimensions of landing gear tire nose: 300x85 (4") / main: 350x115 (6")

5. Masses

According to the regulation UL 2-part I., modified wording from 17.10.2002:

Maximum take-off mass..... 472,5 kg (with parachute system)
 Empty mass standard equipment 307 kg ± 2% (with parachute system)
 Maximum fuel mass (fuel tanks 2x40 l)..... 56 kg
 Maximum cabin baggage mass..... 30 kg

According to the regulation UL 2-part I., issued 01. 2019:

Maximum take-off mass..... 600 kg (with parachute system)
 Empty mass standard equipment max. 381 kg ± 2% (with parachute system)
 Maximum fuel mass (fuel tanks 2x40 l)..... 56 kg
 Maximum fuel mass (fuel tanks 2x60 l)..... 86,4 kg (supplement "b")
 Maximum cabin baggage mass..... 30 kg

6. Flight performances

Performances correspond to sea level in International Standard Atmosphere, MTOM, with Rotax 912 ULS engine and:

for MTOM 472,5 kg: Woodcomp (SPORT PROP) Klassic 170/3/R propeller (pitch angle 15,5°)
 for MTOM 600 kg: Woodcomp SR3000/3N propeller

	Take-off mass 450 (472,5) kg	Take-off mass 600 kg
All speeds are CAS:		
Stalling speed in landing configuration V _{SO}	63 km/h	77 km/h
Stalling speed with retracted flaps V _{S1}	73 km/h	81 km/h
Maximum speed with flaps fully extended V _{FE}	115 km/h	115 km/h
Max. maneuvering speed V _A	147 km/h	147 km/h
Max. speed of horizontal flight V _H	215 km/h	200 km/h
Never exceed speed V _{NE}	260 km/h	260 km/h
Total distance of take-off (till reaching 50 ft)	250 m	<450 m
Climbing	4,8 m/s 110 km/h	6,6 m/s 110 km/h

- 7. Center of Gravity position limits:** Front limit of C – G position: 22 % b_{SAT}
Rear limit of C – G position: 34 % b_{SAT}
- 8. Datum plane:** Datum plane is leading edge of centersection wing
Mean aerodynamic chord depth of $b_{SAT} = 1,29$ m
Leading point of Mean aerodynamic chord is 68 mm behind leading edge of centersection wing – datum plane.
- 9. Calc. load factor** Maximum positive / negative load factor+4,0 / -2,0.
- 10. Engine:** Rotax 912 UL or Rotax 912 ULS
- 11. Engine limits:** Rotax 912 ULS
Maximum take-off power 73,5 kW/ 5800 min^{-1} (max. 5 min)
Maximum continuous power 69 kW/5500 min^{-1}
- Rotax 912 UL
Maximum take-off power 59,6 kW/5800 min^{-1} (max. 5 min)
Maximum continuous power 58 kW/5500 min^{-1}
- 12. Propeller:**
- | | |
|---------------|--|
| Type: | E-PROPS Durandal 100 M |
| Manufacturer: | Helices E prop, France |
| Description: | ground adjustable, composite, 3-blade. |
| Diameter: | 1700 mm |
| Type: | DUC Swirl |
| Manufacturer: | DUC Helices Propellers, France |
| Description: | ground adjustable, composite, 3-blade. |
| Diameter: | 1730 mm |
| Type: | DUC Windspoon |
| Manufacturer: | DUC Helices Propellers, France |
| Description: | ground adjustable, composite, 3-blade. |
| Diameter: | 1730 mm |
| Type: | Woodcomp SR 3000/3N |
| Manufacturer: | Woodcomp s.r.o., |
| Description: | electric in flight adjustable, composite, 3-blade. |
| Diameter: | 1680 mm |
| Type: | Woodcomp Klassic 170 |
| Manufacturer: | Woodcomp s.r.o. |
| Description: | ground adjustable, wood and composite, 3-blade. |
| Diameter: | 1700 mm |

- 13. Fuel:** EUROSUPER RON 95 unleaded in accordance with DIN 51607, Ö-NORM 1100 AVGAS 100 LL.
- For Czech rep is recommended gasoline BA 95 Natural
- 14. Oil:** Special oil for Rotax 912 family motor in accordance with ROTAX. Oil classification: API SF(SG) or higher; Oil must contain additives for gearboxes (like for 4-strokes motorcycles).
- 15. Aerotow:** With ultralight airplane JA-400 is allowed to provide aerotow of gliders with these limits:
- motor ROTAX 912 ULS
 - propeller electric in flight adjustable, composite, 3-blade: Woodcomp SR 3000
 - maximum weak link value = 300 daN +/- 30 daN
 - maximum take-off mass of gliders = 500 kg
 - optimal lift speed is 110 km/h
 - max. speed of aerotow: $V_A = 145$ km/h (or according to gliders limits)

Towing aircraft must meet requirements of Annex III of UL-2/part I airworthiness (complement of requirements for aerotow of gliders by UL Aircraft). Procedures and limitations are stated in complement of Pilot Operation Handbook for JA-400.

IV. Operation and maintenance basis

- Pilot Operation Handbook for JA-400 (with appendixes for installed equipment)
- Operation Handbook for ROTAX 912
- Operation Handbook for installed propeller
- Instruction manual for parachute system (if installed)
- Instruction manuals for instigated equipment

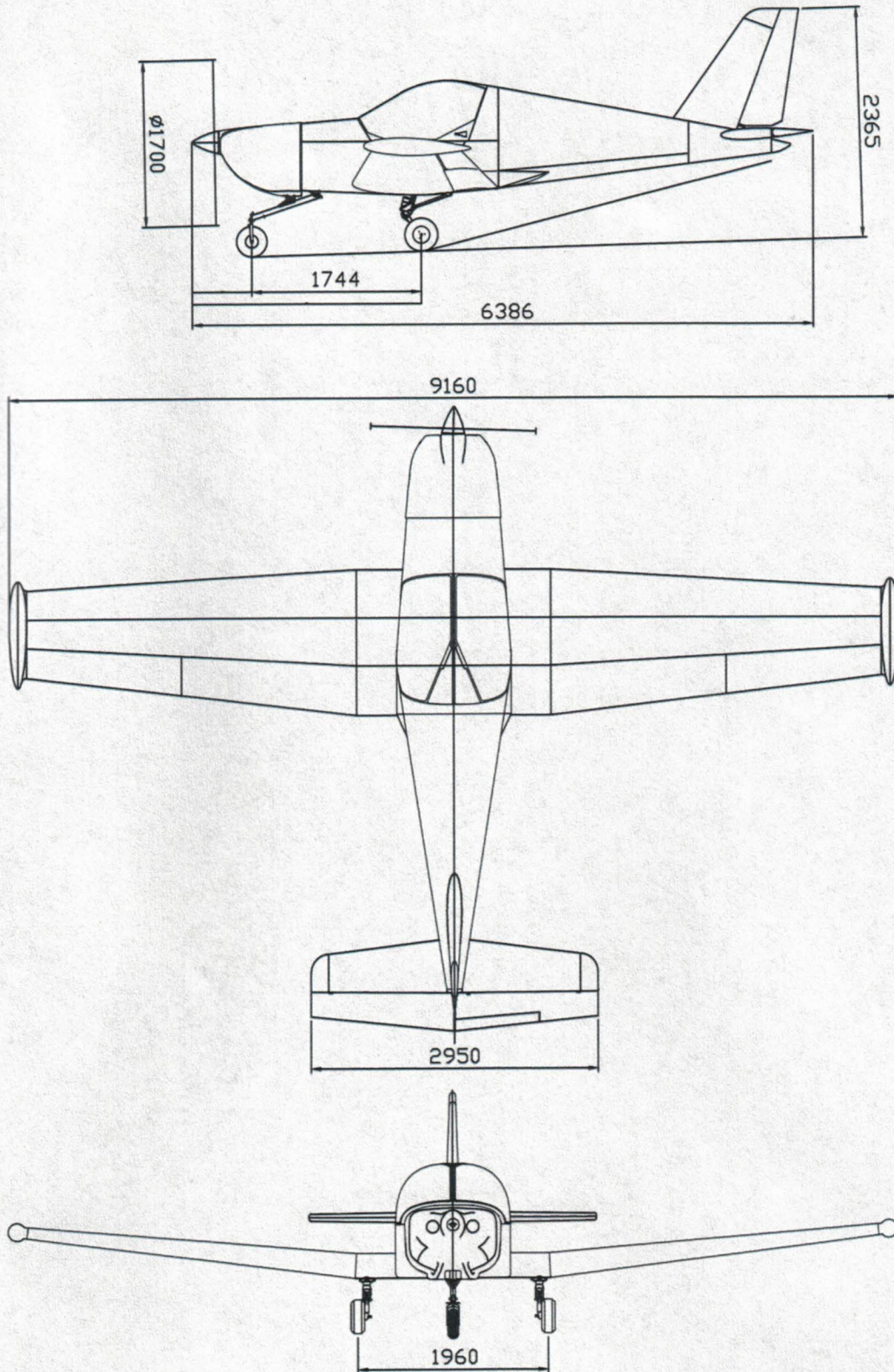
V. Supplements:

- a) Supplement "a": 30.06.2020 increase of MTOM to 600kg
- b) Supplement "b": 22.9.2021 wing fuel tanks 2x60l

Notes:

1. Each airplane prepared for certification (Certificate of airworthiness) must have actual Empty aircraft mass measuring and C-G position calculation protocol with list of installed equipment (which is computed to empty mass).
2. Airplane must have all specified placards and marking in accordance with Pilot Operation Handbook.

VI. Diagram of JA-400 (all dimensions are in millimetres)



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