



TYPE-CERTIFICATE DATA SHEET

NO. EASA.A.656

for
AS 33

Type Certificate Holder
Alexander Schleicher GmbH & Co., Segelflugzeugbau

Alexander-Schleicher-Straße 1
36163 Poppenhausen
Germany

For models: AS 33 Es
AS 33 Me



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Section A: **AS 33 Es**

A.I General

- | | |
|---|--|
| 1. Type/ Model/ Variant | |
| 1.1 Type: | AS 33 |
| 1.2 Variant: | AS 33 Es |
| 2. Airworthiness Category | Powered Sailplane, CS 22 -Utility |
| 3. Manufacturer | Alexander Schleicher GmbH & Co.,
Segelflugzeugbau
Alexander-Schleicher-Straße 1
36163 Poppenhausen (Wasserkuppe)
Germany |
| 4. EASA Type Certification Application Date | 23 August 2018 |
| 5. EASA Type Certification Date | 25 September 2020 |

A.II EASA Certification Basis

- | | |
|---|---|
| 1. Reference Date for determining the applicable requirements | 26 August 2018 |
| 2. Airworthiness Requirements | Certification Specification for Sailplanes and Powered Sailplanes CS 22, Amend. 2, effective on March 5, 2009 |
| 3. Special Conditions | None |
| 4. Exemptions | None |
| 5. Deviations | None |
| 6. Equivalent Safety Findings | CS 22.331 (d)(2)
CS 22.335 (f)
CS 22.585 (a) |
| 7. Environmental Protection | None |



A.III Technical Characteristics and Operational Limitations

1. Type Design Definition
List of drawing files AS 33 Es, issue 01
September 2020
2. Description
Single-seat, shoulder-winged non-self
launching powered sailplane,
CFRP/GFRP/AFRP-composite construction
for FAI 18m class; four-part wing with four-
panel Schempp-Hirth type airbrakes on
upper wing surface, detachable winglets,
water ballast tanks in the wing and optional
in the fin, retractable landing gear with
hydraulic disc brake, T-shaped horizontal
tail (fixed horizontal stabilizer with elevator,
fin and rudder).
3. Equipment
Min. required Equipment:
 - 1 Air speed indicator (up to 300 km/h)
 - 1 Altimeter
 - 1 Magnetic compass
 - 1 Outside air temperature indicator
(when flying with water ballast)
 - 1 4-point harness (symmetrical)
 - 1 Parachute or back cushion (thickness
approx. 8 cm)With engine installed:
 - 1 Power-plant instrument, ILEC MCU
type AS 33 EsAdditional equipment refer to Flight and
Maintenance Manual
4. Dimensions

Span:	15,0 m	18,0 m
Wing area:	8,8 m ²	10,0 m ²
Length:	6,5 m	6,5 m
5. Engine
 - 5.1 Model
SOLO 2350 (SOLO 2350e according
Technical Note 4603-16)
 - 5.2 Type Certificate
Type Certificate Data Sheet No. EASA.E.219
 - 5.3 Limitations
Maximum RPM: 5400 min⁻¹
Maximum continuous RPM: 5400 min⁻¹
 - 5.4 Maximum Continuous Power
18,0 kW



6.	Propeller		
6.1	Model	AS2F1-3/L100-56-N2	
6.2	Type Certificate	Type Certificate Data Sheet No. EASA.P.004	
6.3	Number of blades	2	
6.4	Diameter	100 cm	
6.5	Sense of Rotation	counter-clockwise	
7.	Fluids:		
7.1	Fuel:	2-stroke mixture from AVGAS 100LL or unleaded MOGAS 95 ROZ	
7.2	Oil:	Oil-to-fuel mixture 1:40 2-stroke oil Castrol RS 2T, Castrol Super TT, Castrol TTS or Castrol Go!2T.	
7.3	Coolant:	N/A	
8.	Fluid capacities:		
8.1	Fuel:		
	Max. capacity	7,0 l (optional 11,0 l)	
	Max. usable	6,8 l	
8.2	Oil	N/A	
8.3	Coolant system capacity	N/A	
9.	Launching Hooks	1) Nose tow hook Tost "E 22", LBA Datasheet No. 11.402/9 NTS 2) Safety hook Tost "Europa G 88", LBA Datasheet No. 60.230/2	
10.	Weak Links	Ultimate strength: - For aero tow: max. 825 daN - For winch- and car launch: max. 935 daN	
11.	Load Factors	+5,3 / -2,65 (up to V_A) +4,0 / -1,5 (up to V_{NE})	
12.	Air Speeds		
12.1	Manoeuvring speed	V_A	200 km/h
12.2	Never exceed speed	V_{NE}	270 km/h
12.3	Maximum permitted speeds		
	- in strong turbulence	V_{RA}	200 km/h
	- in aero-tow	V_T	180 km/h
	- in winch-launch	V_W	140 km/h
	- for gear operation	V_{LO}	200 km/h
	- for extracting engine	$V_{PO,max}$	140 km/h
	- with wing flaps at pos. 1,2,3,4	$V_{FE 1,2,3,4}$	270 km/h
	- with wing flaps at pos. N,5,6	$V_{FE N,5,6}$	200 km/h
	- with wing flaps at pos. L	$V_{FE L}$	150 km/h
13.	Maximum Operating Altitude	None	



14. Approved Operations Capability	VFR Day only Cloud flying not permitted Aerobatic manoeuvres not permitted
15. Launch methods	Aero tow Winch and car launch
16. Maximum Masses	
16.1 Maximum Take-off Mass	With 15 m wingspan: 550 kg (see AV.5) With 18 m wingspan: 600 kg
16.2 Max. Mass of non-lifting parts	300 kg
17. Centre of Gravity Range	220 mm – 330 mm aft of datum
18. Datum	Wing leading edge at root rib
19. Levelling Means	Wedge 1000:54 placed horizontal on upper side of the fuselage boom horizontal
20. Control Surface Deflections	Refer to Maintenance Manual
21. Minimum Flight Crew	1
22. Maximum Passenger Seating Capacity	0
23. Baggage/ Cargo Compartments	12 kg (upper baggage compartment) 5 kg (lower baggage compartment)
24. Lifetime limitations	Refer to Maintenance Manual



A.IV Operating and Service Instructions

1. Flight Manual
Flight Manual for the self-sustaining powered sailplane AS 33 Es, Issue 01 November 2020, or later EASA approved revisions
2. Maintenance Manual
Maintenance Manual for the self-sustaining powered sailplane AS 33 Es, Issue 01 November 2020, or later EASA approved revisions
3. Structural Repair Manual
Repair Manual Alexander Schleicher, latest approved revision
4. Operating Manual and Maintenance Manual for Engine
Approved manual for the SOLO Engine type 2350, latest applicable issue, by SOLO Kleinmotoren GmbH
5. Operating Manual and Maintenance Manual for Propeller
Operating and Maintenance Manual for the propeller AS2F1, series AS2F1-3, in the latest valid edition
6. Manual for the Tost release, latest approved issue



A.V Notes

1. Production is confined to industrial production
2. All parts made from fibre reinforced plastic exposed to sun radiation – except the areas for markings and registration and except from the inner sides of the engine supports – must have a white colour surface.
3. Operation of the sailplane with power plant removed or inoperative according to the instructions given in the flight and maintenance manual is approved.
4. As long as the sailplane has not been modified in accordance with Technical Note Nr. 1 the following limitations apply:

A.II.12.3	V_{NE} : 220 km/h
	$V_{FE\ 1,2,3,4}$ 220 km/h
A.II.13	Maximum Operating Altitude 4000 m
A.II.14	Licensed pilots only (no flight training) Spinning not permitted
A.II.15	No Winch launch and car launch
5. Operation of the sailplane with 15m outer wings according Technical Note No. 4 is approved.



Section B: **AS 33 Me**

B.I General

- | | |
|---|--|
| 1. Type/ Model/ Variant | |
| 1.1 Type: | AS 33 |
| 1.2 Variant: | AS 33 Me |
| 2. Airworthiness Category | Powered Sailplane, CS 22 -Utility |
| 3. Manufacturer | Alexander Schleicher GmbH & Co.,
Segelflugzeugbau
Alexander-Schleicher-Straße 1
36163 Poppenhausen (Wasserkuppe)
Germany |
| 4. EASA Type Certification Application Date | 01 October 2021 |
| 5. EASA Type Certification Date | 21 December 2022 |

B.II EASA Certification Basis

- | | |
|---|---|
| 1. Reference Date for determining the applicable requirements | 30 September 2021 |
| 2. Airworthiness Requirements | Certification Specification for Sailplanes and Powered Sailplanes CS 22, Amend. 2, effective on March 5, 2009 |
| 3. Special Conditions | SC-22.2014-01 - Installation of electric propulsion units in powered sailplanes
SC E-01 - Airworthiness standard for CS-22H Electrical retractable engine to be operated in powered sailplanes |
| 4. Exemptions | None |
| 5. Deviations | None |
| 6. Equivalent Safety Findings | CS 22.331 (d)(2)
CS 22.335 (f)
CS 22.585 (a) |
| 7. Environmental Protection | CS 36 (ICAO Annex 16, Chapter 10) |



B.III Technical Characteristics and Operational Limitations

1. Type Design Definition
List of drawing files AS 33 Me, issue 25 November 2022
2. Description
Single-seat, shoulder-winged self-launching powered sailplane, CFRP/GFRP/AFRP-composite construction for FAI 18m class; four-part wing with four-panel Schempp-Hirth type airbrakes on upper wing surface, detachable winglets, water ballast tanks in the wing and optional in the fin, retractable landing gear with hydraulic disc brake, T-shaped horizontal tail (fixed horizontal stabilizer with elevator, fin and rudder).
3. Equipment
Min. required Equipment:
 - 1 Air speed indicator (up to 300 km/h)
 - 1 Altimeter
 - 1 Outside air temperature indicator (when flying with water ballast)
 - 1 4-point harness (symmetrical)
 - 1 Parachute or back cushion (thickness approx. 8 cm)With engine installed:
 - 1 Power-plant instrument, CU-34
 - 1 Magnetic compassAdditional equipment refer to Flight and Maintenance Manual
4. Dimensions

Span:	15,0 m	18,0 m
Wing area:	8,8 m ²	10,0 m ²
Length:	6,5 m	6,5 m
5. Engine
 - 5.1 Model
Alexander Schleicher EA911/1-35LK
 - 5.2 Type Certificate
n/a (accepted as part of the airframe)
 - 5.3 Limitations

Max. Power:	35 kW
Max. RPM:	3750 min ⁻¹
Max. continuous Power:	25 kW
Max. continuous RPM:	3000 min ⁻¹
Max. motor temperature	110°C
Max. power electronics temp.	80°C



6. Propeller
- 6.1 Model AS2F1-6/L120-96-N3
- 6.2 Type Certificate Type Certificate Data Sheet No. EASA.P.004
- 6.3 Number of blades 2
- 6.4 Diameter 120 cm
- 6.5 Sense of Rotation left
7. Battery:
- 7.1 Battery Type 1
- 7.1.1 Battery designation/part no: Battery cell type 1, P/N 911.62.9001
- 7.1.2 Battery capacity: 28 Ah
- 7.1.3 Non-usable battery capacity: 10 Ah (36%)
- 7.1.4 Max battery discharge temperature: 70°C
- 7.1.5 Min battery discharge temperature: -20°C
- 7.1.6 Max battery charge temperature: 50°C
- 7.1.7 Min battery charge temperature: 0°C
- 7.1.8 Range of permissible cell voltage: 3 - 4,15 V
- 7.2 Battery Type 2 (see BV.5)
- 7.2.1 Battery designation/part no: Battery cell type 2, P/N 911.62.9003
- 7.2.2 Battery capacity: 28 Ah
- 7.2.3 Non-usable battery capacity: 10 Ah (36%)
- 7.2.4 Max battery discharge temperature: 60°C
- 7.2.5 Min battery discharge temperature: -20°C
- 7.2.6 Max battery charge temperature: 40°C
- 7.2.7 Min battery charge temperature: 0°C
- 7.2.8 Range of permissible cell voltage: 3 - 4,2 V
8. Launching Hooks
- 1) Nose tow hook Tost "E 22", LBA
Datasheet No. 11.402/9 NTS
- 2) Safety hook Tost "Europa G 88", LBA
Datasheet No. 60.230/2
9. Weak Links
- Ultimate strength:
- For aero tow: max. 825 daN
 - For winch- and car launch: max. 935 daN
10. Load Factors
- +5,3 / -2,65 (up to V_A)
- +4,0 / -1,5 (up to V_{NE})



11. Air Speeds

11.1 Manoeuvring speed	V_A	200 km/h
11.2 Never exceed speed	V_{NE}	270 km/h
11.3 Maximum permitted speeds		
- in strong turbulence	V_{RA}	200 km/h
- in aero-tow	V_T	180 km/h
- in winch-launch	V_W	140 km/h
- for gear operation	V_{LO}	200 km/h
- for extracting engine	$V_{PO,max}$	135 km/h
- with wing flaps at pos. 1,2,3,4	$V_{FE 1,2,3,4}$	270 km/h
- with wing flaps at pos. N,5,6	$V_{FE N,5,6}$	200 km/h
- with wing flaps at pos. L	$V_{FE L}$	150 km/h

12. Maximum Operating Altitude None

13. Approved Operations Capability VFR Day only
Cloud flying not permitted
Aerobatic manoeuvres not permitted

14. Launch methods Aero tow
Winch and car launch
Self-launch

15. Maximum Masses

15.1 Maximum Take-off Mass With 15 m wingspan: 550 kg
With 18 m wingspan: 600 kg

15.2 Max. Mass of non-lifting parts 300 kg

16. Centre of Gravity Range 240 mm – 330 mm aft of datum

17. Datum Wing leading edge at root rib

18. Levelling Means Wedge 1000:54 placed horizontal on upper side of the fuselage boom horizontal

19. Control Surface Deflections Refer to Maintenance Manual

20. Minimum Flight Crew 1

21. Maximum Passenger Seating Capacity 0

22. Baggage/ Cargo Compartments 12 kg (upper baggage compartment)
5 kg (lower baggage compartment)

23. Lifetime limitations Refer to Maintenance Manual



B.IV Operating and Service Instructions

1. Flight Manual
Flight Manual for the powered sailplane AS 33 Me, Issue 01 November 2022, or later EASA approved revisions
2. Maintenance Manual
Maintenance Manual for the powered sailplane AS 33 Me, Issue 01 November 2022, or later EASA approved revisions
3. Structural Repair Manual
Repair Manual Alexander Schleicher, latest approved revision
4. Operating Manual and Maintenance Manual for Engine
Operating and Maintenance Manual for Motor Alexander Schleicher EA911, latest approved version *)
5. Operating Manual and Maintenance Manual for Propeller
Operating and Maintenance Manual for the propeller AS2F1, series AS2F1-6, in the latest approved version *)
6. Manual for the Tost release, latest approved issue

*) The operation and maintenance manuals are elements of the operation instructions of the AS 33 Me. Necessary revisions are not be done in the manuals of the AS 33 Me but separately by the engine and propeller manufacturer.



B.V Notes

1. Production is confined to industrial production
2. All parts made from fibre reinforced plastic exposed to sun radiation – except the areas for markings and registration and – must have a white colour surface.
3. Operation of the sailplane with power plant removed or inoperative according to the instructions given in the flight and maintenance manual is approved.
4. The Alexander Schleicher EA911/1-35LK engine is approved as part of this sailplane model in accordance with Part 21.A.21 (a) 3. (B).
5. The usage of propulsion batteries with cell type 2 (AS P/N 911.62.9003) according TN 1 is approved.



Section C: Administrative Section

C.I Acronyms & Abbreviations

AFRP	Aramid Fibre Reinforced Plastic
CFRP	Carbon Fibre Reinforced Plastic
CRI	Certification Review Item
CS	Certification Specification
CU	Control Unit
EASA	European Union Aviation Safety Agency
GFRP	Glass Fibre Reinforced Plastic
LBA	Luftfahrt-Bundesamt
MCU	Motor Control Unit
ROZ	Researched-Oktanzahl
TN	Technical Note
VFR	Visual Flight Rules

C.II Type Certificate Holder Record

Alexander Schleicher GmbH & Co., Segelflugzeugbau
Alexander-Schleicher-Straße 1
36163 Poppenhausen (Wasserkuppe)
Germany

C.III Change Record

Issue	Date	Changes	TC Date
01	25 September 2020	Initial Issue	25 September 2020
02	11 March 2021	Removal of deviation, full envelope established	
03	26 March 2021	Corrections in: A.III 2, 8.1, 12.3, and 17	
04	30 November 2021	Introduction of 15m wing-span	
05	21 December 2022	Introduction of new model AS 33 Me	21 December 2022

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