



TYPE-CERTIFICATE DATA SHEET

NO. EASA.IM.A.615

for

Cirrus Design SF50

Type Certificate Holder

Cirrus Design Corporation

4515 Taylor Circle
Duluth, Minnesota 55811
United States of America

For models: SF50



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I.General

1. **Aeroplane** Cirrus Design SF50
2. **Data Sheet No:** EASA.IM.A.615
3. **Airworthiness Category:** CS-23 Normal Category.
4. **Certifying Authority:** Federal Aviation Administration
Chicago Aircraft Certification Office
2300 East Devon Avenue, Room 107
Des Plaines, IL 60018
United States of America
5. **Type Certificate Holder:** **Cirrus Design Corporation**
4515 Taylor Circle
Duluth, Minnesota 55811
United States of America
6. **Manufacturer:** **Cirrus Design Corporation**
4515 Taylor Circle
Duluth, Minnesota 55811
United States of America
7. **EASA Validation Application Date:** 15 January 2014
8. **FAA Type Certification Date:** 28 October 2016
9. **EASA Type Certification Date:** 18 May 2017

II.Certification Basis

- a. **Reference Date for FAA Certification:** **28 October 2013**
- b. **FAA Type Certificate Data Sheet No.** **A00018CH**
- c. **FAA Certification Basis:**

14 CFR Part 23 effective February 1, 1965, as amended by Amendments 23-1 through 23-62
14CFR Part 34 effective September 10, 1990, as amended by Amendments 34-1 through 34-5



14 CFR Part 36 effective December 1, 1969 as amended by Amendments 36-1 through 36-28

Special Conditions in accordance with 14 CFR Part 11:

23-261-SC, Inflatable Three-Point Restraint Safety Belt with an Integrated Airbag Device

23-267-SC, Full Authority Digital Engine Control System

23-272-SC, Auto Throttle

23-275-SC, Whole Airplane Parachute Recovery System

23-289-SC, Installation of Rechargeable Lithium Batteries

Equivalent Level of Safety Findings in accordance with 14 CFR Part 21:

ELOS number, date and subject	Regulation modified by ELOS
ACE-14-06, dated April 10, 2014:	§23.1559, §23.1567
Electronic Placards	
ACE-15-04, dated February 27, 2015:	§23.729
Landing Gear Warning Horn	
ACE-15-14, dated June 25, 2015:	§23.781(b)
Cockpit Control Knob Shape	
TC06444CH-A-F-2, dated July 12, 2016:	§23.221
Spin Requirements	
TC06444CH-A-F-5, dated July 15, 2016:	§23.45, §23.51, §23.63, §23.67, §23.73, §23.77, §23.161, §23.181, §23.221, §23.251, §23.253, §23.257, §23.785, §23.831, §23.1195, §23.1197, §23.1199, §23.1201, §23.1527, §23.1545, §23.1583
TC06444CH-A-S-11, dated June 23, 2016: Storage Battery Design and Installation	§23.1353(h)

Exemptions from 14 CFR Part 23 in accordance with 14 CFR Part 11:

Exemption No. 9948 dated October 23, 2009, §23.562(b) and §23.785(a), installation of seats limited to occupants weighing 90 pounds or less.

Exemption No. 11092 dated October 23, 2014, §23.177(b), use of electric roll trim for static lateral stability



Exemption No. 16970 dated June 23, 2016, §23.1419(a), 61-knot stall speed with critical ice accretions

Other Certification Basis:

Compliance has been shown for flight into known and forecast icing conditions

Per the type design, S/N 0008, 0089, 0094 and subsequent are capable for Reduced Vertical Separation Minima (RVSM) operation except when configured as aircraft part number 26000-003.

The SF50 is defined by Cirrus document E00000474, SF50 Master Drawing List

d. EASA Airworthiness Requirements:

- CS 23 Amdt 3, Normal, Utility, Aerobatic, and Commuter Category Aircraft, dated 13 July 2012.
- CS 34 Amdt 1, Aircraft Engine Emissions and fuel venting, Am 1, dated 23 January 2013.
- CS 36: Amdt 3, Aircraft Noise Am 3, dated 23 January 2013.
- CS-ACNS Airborne Communications, Navigation and Surveillance, Initial Issue dated 17 December 2013.
- CS-FCD Operational Suitability Data (OSD) Flight Crew Data, 31 January 2014
- CS-MMEL Master Minimum Equipment List, 31 January 2014

e. EASA Special Conditions:

- SC-B23.div-01 Human Factors – Integrated Avionics Systems
- SC-B23.0045-01 Performance
- SC-B23.0049-01 Stall Speed
- SC-B23.0143-01 Manoeuvre Margin
- SC-B23.0201-01 Wings Level Stall
- SC-B23.0203-01 Turning Flight and Accelerated Turning Stalls
- SC-B23.0253-01 Airborne Deceleration Devices
- SC-B23.0253-01 High Speed Characteristics
- SC-B23.1587-01 Landing Distance Factors
- SC-C23.0571-01 Sonic Fatigue
- SC-D23.0703-01 Take-off Warning System
- SC-D23.0731-01 Wheels
- SC-D23.0783-02 Doors
- SC-E23.0901-01 Turbine Engine Installation
- SC-E23.0967-01 Fuel Tank Crashworthiness
- SC-E23.1093-01 Cold Soaked Fuel
- SC-E23.1183-01 Lines, fittings and components
- SC-E23.1195-01 Powerplant Fire Protection and Fuel Systems
- SC-F23.1309-02 Protection from the Effect of HIRF



SC-F23.1309-03	Protection from the Effects of Lightning Strike, Indirect Effects
SC-F23.1353-01	Battery Endurance Requirements
SC-F23.1353-02	Lithium Batteries
23-261-SC	Inflatable Three-Point Restraint Safety Belt with an Integrated Airbag Device
23-267-SC	Full Authority Digital Engine Control System
23-272-SC	Auto Throttle
23-275-SC	Whole Airplane Parachute Recovery System

f. EASA Exemptions:

none

g. EASA Equivalent Safety Findings:

- 90lb Seats outlined in Exemption No. 9948
- Electronic Placards (FAA ACE 14-06)
- Landing Gear Warning Horn (FAA ACE 15-04)
- Control Knob Shape (FAA ACE 15-14)
- Spin Requirements (TC6444 CH-A-F2)
- Non-Stabilised Magnetic Heading Indicator (CRI F-111)

h. EASA Environmental Standards:

- CS 34 - Aircraft Engine Emissions and Fuel Venting, of 23 January 2013
- CS 36 - Aircraft Noise, of 23 January 2013;

III. Technical Characteristics and Operational Limitations

- 1. Type Design Definition:** Defined by Report E00000474, SF50 Master Drawing List

- 2. Description:**

Single turbofan airplane with low wing and V-tail configuration.

The fuselage and wing are primarily of composite construction. The tricycle configuration landing gear is retractable with a single wheel at each location.

- 3. Dimensions:**

Length	9.36 m	(30.7 ft)
Span	11.67 m	(38.3 ft)
Height	3.23 m	(10.9 ft)
Wing Area	18.18 m ²	(195.7 ft ²)



4. **Engine:** One (1) Williams International FJ33-5A turbofan engine
Type Certificate E3GL
5. **Fuel:** Jet A, Jet A-1 or JP-8
6. **Oil:** Refer to applicable manuals
7. **Engine Limits:**

Thrust Setting	ITT °C	N1 RPM (%)	N2 RPM (%)	Thrust (lb)
Takeoff	877 (10 Sec)	23,566	51,703	1846
	862 (5min)	(104.74%)	(100.39%)	
Max Continuous	836	23,791 (105.74%) for 30 sec	51,844 (100.67%) for 30 sec.	1846

8. **Airspeeds:**
- | | | |
|-------------------|--|-----------|
| V_{MO} | Maximum Operating Speed | 250 KIAS |
| M_{MO} | Maximum Operating Mach Number | 0.53 Mach |
| V_O | Operating Manoeuvring Speed | 150 KIAS |
| $V_{FE\ 50\%}$ | Maximum Flap Extended Speed (50% flaps) | 190 KIAS |
| $V_{FE\ 100\%}$ | Maximum Flap Extended Speed (100% flaps) | 150 KIAS |
| V_{LE} | Maximum Landing Gear Extended Speed | 210 KIAS |
| V_{LO_Extend} | Maximum Landing Gear Extension Speed | 210 KIAS |
| $V_{LO_Retract}$ | Maximum Landing Gear Retract Speed | 150 KIAS |

9. **Maximum Operating Altitude:** 8534 m (28,000 ft) MSL
S/N 0004 and subsequent for aircraft part numbers
26000-001 and 26000-003
- 9449 m (31,000 ft) MSL
S/N 0008, 0089, 0094 and subsequent except aircraft
part number 26000-003
10. **Operational Capability:** Single Pilot / Two Pilots
VFR Day and Night
IFR Day and Night



- | | |
|---|---|
| 11. Maximum Certified Weights: | Ramp: 2740 kg (6040 lb)
Takeoff: 2722 kg (6000 lb)
Landing: 2517 kg (5550 lb)
Zero Fuel: 2223 kg (4900 lb) |
| 12. Centre of Gravity: | See Airplane Flight Manual |
| 13. Datum: | 2.26 m (89.0 in) in front of the forward cabin bulkhead |
| 14. reserved | |
| 15. Leveling Means: | Refer to the Airplane Maintenance Manual (31448-001) |
| 16. Minimum Flight Crew: | One (1) Pilot |
| 17. Number of Seats: | Maximum 7. Refer to the Airplane Flight Manual for seat configurations, moment arms and limitations. |
| 18. Baggage / Cargo Compartment: | Combined 136 kg (300 lb)

For loading distribution, refer to the Airplane Flight Manual (31452-001) |

IV. Operating and Servicing Instructions

1. Airplane Flight Manual (AFM):

Airplanes must be operated according to the FAA approved AFM.

- Document number 31452-001 for aircraft serials 0004 through 0007, 0009 through 0088 and 0090 through 0093.
- Document number 31452-002 for 0008, 0089, 0094 and subsequent.
- Document number 31452-103 AFMS for all aircraft registered in the EU (or later approved revisions as applicable)

The Airplane Flight Manual (AFM) may be installed in the airplane in hardcopy format or on a portable device in electronic format in accordance with the limitations in the AFM. The electronic format has the same base and dash number as the hardcopy format and includes “eAFM” after the dash number.



2. Airplane Maintenance Manual (AMM):

Continuing airworthiness limitations are included in Section 4 of the (AMM) Document Number 31448-001 or later revision. Chapter 4, "Airworthiness Limitations" may not be changed without the approval of EASA.

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List

- a) 39457-001 EASA Master Minimum Equipment List, Original Issue or later approved revision.
- b) Required for entry into service by EU operator.

2. Flight Crew Data

- c) E00001811, Rev A EASA Operational Suitability Data, Flight Crew, original or later approved revision.
- d) Required for entry into service by EU operator.
- e) Pilot Type Rating: SF50

VI. Production Basis

Production Certificate 338CE issued 12 June 2000, Amended 03 January 2017
Production Limitation Record Issued 12 June 2000, Amended 01 May 2017



VII. Notes

NOTE 1 – Noise.

For further details to noise please refer to TCDS-N IM.A.615

NOTE 2 - Weight and balance.

A current weight and balance report, including list of equipment included in the certificated empty weight and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

NOTE 3 - Markings and placards.

All markings and placards required by either the EASA-approved Airplane Flight Manual (Document No. 31452-001), the applicable operating rules, or the certification basis must be installed as specified.

NOTE 4 – Safe Return Autoland (EASA Approval No. 10076769)

The available Safe Return Autoland (Emergency Autoland) is eligible for ASN 0160 and subsequent. For SF50 aircraft equipped with the available Safe Return Autoland system, reference TAFM 20-03; this will be incorporated into AFM 35142 in future revision.

VIII. Administrative Section

i. Acronyms

ii. Type Certificate Holder Records

iii. Change Record

Issue 1	18 May 2017	Initial issue SF50
Issue 2	18 Aug 2017	MMEL included
Issue 3	4 July 2019	Major Changes including MOA FL310 and corrections
Issue 4	30 June 2021	Major Change Safe Return

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