Civil Aviation Authority
United Kingdom

TYPE-CERTIFICATE DATA SHEET

UK.TC.A.00011

for

Cirrus Design SF50

Type Certificate Holder

Cirrus Design Corporation

4515 Taylor Circle

Duluth

Minnesota

55811

United States of America

Model(s):	SF50
Issue:	1
Date of issue:	22 October 2021

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Section 1 SF50

I General

1. Type / Model / Variant

1.1. Type

Cirrus Design SF50

1.2. Model

SF50

1.3. Variant

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2. Type Certificate Holder

Cirrus Design Corporation
4515 Taylor Circle
Duluth
Minnesota
55811
United States of America

3. Manufacturer

Cirrus Design Corporation
4515 Taylor Circle
Duluth
Minnesota
55811
United States of America

4. Airworthiness Category

CS-23 Normal Category

5. State of Design Authority

Federal Aviation Administration (FAA)

6. Type Certificate Date by FAA

28 October 2016

7. Type Certificate Number by FAA

A00018CH

8. EASA Validation Application Date

15 January 2014

9. EASA Type Certification Date

18 May 2017

10. Type Certificate Data Sheet Number by EASA

EASA.IM.A.615

II Certification Basis

1. Reference Date for FAA Certification

28 October 2013

2. FAA Certification Basis

- 14 CFR Part 23 effective February 1, 1965, as amended by Amendments 23-1 through 23-62.
- 14 CFR 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.

3. Special Conditions in accordance with 14 CFR Part 21

- 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.

4. Exemptions from 14 CFR Part 23 in accordance with 14 CFR Part 21

- 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

5. Deviations

None.

6. 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: Electronic Placards	§23.1559, §23.1567
ACE-15-04, dated February 27, 2015: Landing Gear Warning Horn	§23.729
ACE-15-14, dated June 25, 2015: Cockpit Control Knob Shape	§23.781(b)
TC06444CH-A-F-2, dated July 12, 2016: Spin Requirements	§23.221
TC06444CH-A-F-5, dated July 15, 2016: Amendment 62 Corrections	§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)

7. Requirements elected to comply

None.

8. 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.

9. UK CAA 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 January2013.
- 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.

10. UK CAA 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.

11. UK CAA Exemptions

None.

12. UK CAA Equivalent Safety Findings

- 90 lb 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).

13. UK CAA Environmental Protection Requirements

13.1. Emission and Fuel Venting Requirements

CS 34 Aircraft Engine Emissions and Fuel Venting, of 23 January 2013.

13.2. Noise Requirements

CS 36 Aircraft Noise, of 23 January 2013.
See TCDSN UK.TC.A.00011.

III Technical Characteristic and Operating 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

3.1. Fuselage

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

4.1. Model

One (1) Williams International FJ33-5A turbofan engine

4.2. Type Certificate

FAA TC/TCDS No.:	E3GLE
UK TC/TCDS No.:	UK.TC.E.00013

4.3. Engine Limitations

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

5. Fluids (Fuel/Oil

5.1. Fuel

Jet A, Jet A-1 or JP-8

5.2. Oil

Refer to applicable manuals.

6. Airspeed Limitations

V_M	Maximum Operating Speed	250 KIAS
M_{MO}	Maximum Operating Mach Number	0.53 Mach
V_O	Operating Manoeuvering 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

7. Maximum Operating Altitud

8,534 m (28,000 ft) MSL
S/N 0004 and subsequent for aircraft part numbers 26000-001 and 26000-003.

9,449 m (31,000 ft) MSL
S/N 0008, 0089, 0094 and subsequent except aircraft part number 26000-003.

8. Operational Capability

Single Pilot / Two Pilots
VFR Day and Night
IFR Day and Night

9. Maximum Masses

Ramp:	2,740 kg (6,040 lb)
Takeoff:	2,722 kg (6,000 lb)
Landing:	2,517 kg (5,550 lb)
Zero Fuel:	2,223 kg (4,900 lb)

10. Centre of Gravity Range

Refer to approved Airplane Flight Manual (AFM).

11. Datum

2.26 m (89.0 in) in front of the forward cabin bulkhead.

12. Levelling Means

Refer to the Airplane Maintenance Manual (AMM) (31448-001).

13. Minimum Flight Crew

One (1) pilot.

14. Number of Seats

Maximum 7. Refer to the AFM for seat configurations, moment arms and limitations.

15. Maximum Baggage / Cargo Loads

Combined 136 kg (300 lb).
For loading distribution, refer to the AFM (31452-001).

IV Operating and Service 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 31448-001or later revision.

Chapter 4, “Airworthiness Limitations” may not be changed without the approval of CAA.

V Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below were approved by the European Union Aviation Safety Agency under the EASA Type Certificate as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No. 69/2014. Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

a. 39457-001 EASA Master Minimum Equipment List, Original Issue or later approved revision.

b. Required for entry into service by UK operator.

2. Flight Crew Data (FCD)

a. E00001811, Rev A EASA Operational Suitability Data, Flight Crew, original or later approved revision.

b. Required for entry into service by UK operator.

c. 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

1. 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.
2. Markings and placards
   All markings and placards required by either the UK CAA-approved Airplane Flight Manual (Document No. 31452-001), the applicable operating rules, or the certification basis must be installed as specified.
3. Safe Return Autoland (UK CAA Approval reference No. UK.MAJ.00055)
   The Emergency Autoland System is eligible for aircraft serial number 0160 and subsequent.
   For SF50 aircraft equipped with the available Emergency Autoland System, reference TAFM 20-03; this will be incorporated into AFM 35142 in future revision.

Section 2 Administration

I. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
°C	Degree Celsius
ACNS	Airborne Communication, Navigation and Surveillance
AFM	Airplane Flight Manual
AFMS	Airplane Flight Manual Supplement
Amdt.	Amendment
AMM	Airplane Maintenance Manual
CAA	Civil Aviation Authority
CRI	Certification Review Item
CS	Certification Specification
eAFM	Electronic Airplane Flight Manual
EASA	European Union Aviation Safety Agency
FAA	Federal Aviation Administration
FCD	Flight Crew Data
ft	feet
IFR	Instrumental Flight Rules
ITT	Inter Turbine Temperature
HIRF	High intensity Radiated Field
KIAS	Knots Indicated Air Speed
kg	Kilogram(s)
lb	Pound(s)
m	Metre(s)
M_{MO}	Maximum Operating Mach Number
min	Minute(s)
MMEL	Master Minimum Equipment List
MSL	Mean Sea Level
N1	Low Pressure Rotor rpm
N2	Low Pressure Rotor rpm
No.	Number
OSD	Operational Suitability Data
rpm	Revolutions Per Minute
S/N	Serial Number
sec	Second(s)
TAFM	Temporary Airplane Flight Manual
TCDS	Type Certificate Data Sheet
TCDSN	Type Certificate Data Sheet for Noise
TCH	Type Certificate Holder
UK	United Kingdom
$V_{FE\ 50\%}$	Maximum Flap Extended Speed (50% flaps)
$V_{FE\ 100\%}$	Maximum Flap Extended Speed (100% flaps)
V_{LE}	Maximum Landing Gear Extended Speed
V_{LO_Extend}	Maximum Landing Gear Extension Speed
$V_{LO\_Retract}$	Maximum Landing Gear Retract Speed
V_M	Maximum Operating Speed
V_O	Operating Manoeuvering Speed
VFR	Visual Flight Rules

II. Type Certificate Holder Record

TCH Record	Period
Cirrus Design Corporation 4515 Taylor Circle Duluth Minnesota 55811 United States of America	Present. No changes.

III. Amendment Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	22 Oct 2021	The content of the initial issue of UK CAA TCDS was taken from EASA TCDS No. EASA.IM.A.615 Issue 3 dated 04 July 2019 except as listed below. Section 1 II.4 Typo corrected. Section 1 V Included reference to the UK regulation. Section 1 VII. Note 3 added resulting from validation of major change Emergency Autoland System (FAA approval reference No. AT09889CH-A dated 27 August 2020). CAA approval reference No.UK.MAJ.00055 refers.	Issue 1 22 Oct 2021

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