TYPE-CERTIFICATE
DATA SHEET

NO. EASA.A.639

for
DA 50

Type Certificate Holder
Diamond Aircraft Industries GmbH
Nikolaus-August-Otto-Straße 5
2700 Wiener Neustadt
Austria

For models: DA 50 C
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SECTION A: DA 50 C

A.I. General

1. Type/ Model/ Variant
   1.1 Type DA 50
   1.2 Model DA 50 C
   1.3 Variant -

2. Airworthiness Category CS 23 Normal Category

3. Manufacturer
   Diamond Aircraft Industries GmbH
   Nikolaus-August-Otto-Straße 5
   2700 Wiener Neustadt
   Austria
   
   Qingdao Wanfeng Diamond Aircraft Manufacturing Co., Ltd. (QDA)
   No.19, Dianbu Aviation Industrial Park
   Laixi County
   Qingdao City, Shandong Province
   People’s Republic of China (PRC)

4. EASA Type Certification Application Date
   25-Nov-2016

A.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements
   14-Aug-2017
   see Note 2

2. Airworthiness Requirements
   CS-23, Amendment 4, issued 15-Jul-2015
   CS-ACNS, Initial Issue, issued 17-Dec-2013
   For aircraft equipped with the factory installed Anti-icing system
   the requirements are listed below:
   
   CS-23 Amendment 5:
   23.2005, 23.2010,
   23.2165 with AMC1 ASTM F3120/F3120M-15 Section A1.4 and
   A2.4 (SLD icing conditions for aircraft not approved for
   operation in SLD icing conditions) for SLD “detect and exit” and
   AMC2 CS-23 Amdt 4 23.1419 Ice Protection,
   23.2415 with AMC2 CS-23 Amdt 4 23.929, 23.975, 23.997,
   23.1093, 23.1105,
   23.2540 with AMC2 CS-23 Amdt 4 23.1323, 23.1325(b), (g),
   23.1419, 23.775(f)
3. Special Conditions
   SC-23.0973-01, i1 Fuel Tank Filler Connection
   SC-23.0977-01, i1 Fuel Tank Outlet
   SC-23.0951-01, i1 Fuel Water Absorption
   SC-23.1557-01, i1 Markings and Placards
   SC-23.1305-01, i1 Powerplant Instruments
   SC-23.1521-01, i1 Powerplant Limitations
   SC-23.1309-01, i1 Cyber Security
   SC-F23.1353-01, i2 Battery Endurance

4. Exemptions
   None

5. Deviations
   CRI F-107 -Continuity requirements for ADS-B

6. Equivalent Safety Findings
   CRI E-73 Liquid Cooling – Tank Volume

7. Environmental Protection
   see TCDSN EASA.A.639

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition
   Doc. No. 9.07.00, Chapter V002/7, latest effective issue

2. Description
   Single engine, five-seat, low wing cantilever composite construction aircraft with T-tail empennage configuration and retractable tricycle landing gear.

3. Equipment
   Equipment list, see AFM Chapter 06

4. Dimensions
   Span  13.41 m  (44 ft)
   Length  9.24 m   (30.31 ft)
   Height  2.95 m   (9.69 ft)
   Wing Area  16.43 m²  (176.85 sqft)

5. Engine
   5.1. Model
   Continental Centurion 3.0 see Note 5
   5.2 Type Certificate
   EASA.E.104
   5.3 Limitations
   Take-off speed  2340 r.p.m.
   Max. continuous speed  2300 r.p.m.
   Max. T/O Power (5 min)  221 kW
   Max. continuous Power  200 kW
   For power-plants limits refer to AFM, Chapter 2

6. Load factors
   at $V_A$ at $V_{NE}$ with flaps in T/O or LDG position
   Positive:  3.8  3.8  2.0
   Negative:  -1.52  0  0

7. Propeller
   7.1 Model
   MT-propeller MTV-12-D/210-56
   7.2 Type Certificate
   EASA.P.013
   7.3 Number of blades  3
TCDS No.: EASA.A.639
DA 50

7.4 Diameter 2100 mm
7.5 Sense of Rotation CW

8. Fluids
8.1 Fuel Jet A-1 (ASTM 1655), see Note 6
8.2 Oil
Engine: AeroShell Oil Diesel Ultra
or see AFM, Chapter 02
Gearbox: CENTURION Gearbox Oil N1
or see AFM, Chapter 02
8.3 Coolant Water / Radiator Protection, for more details see AFM, Chapter 2

9. Fluid capacities
9.1 Fuel
LH Fuel Tank: Total: 98.4 liters (26 US Gallons)
Usable: 94.6 liters (25 US Gallons)
RH Fuel Tank: Total: 96.5 liters (25.5 US Gallons)
Usable: 90.8 liters (24 US Gallons)

9.2 Oil 12 l
9.3 Coolant system 12 l

10. Air Speeds Operating Manoeuvring Speed \( V_{O} \)
up to 1650 kg 117 KEAS
1651 to 1850 kg 123 KEAS
Above 1850 kg 131 KEAS
Flap Extended Speed \( V_{FE} \)
Take-Off 130 KEAS
Landing 118 KEAS
Maximum Landing Gear Operation Speed \( V_{LO} \)
160 KEAS
Maximum Landing Gear Extended Speed \( V_{LE} \)
160 KEAS
Maximum structural cruising speed \( V_{NO} \)
(= Maximum structural design speed \( V_{C} \))
150 KEAS
Never exceed speed \( V_{NE} \) 189 KEAS

11. Flight Envelope Maximum Operating Altitude (MSL) 20,000 ft (6096 m)
Refer to Airplane Flight Manual.

12. Approved Operations Capability
VFR (Day, Night), IFR
Flight into known or forcast icing conditions See Note 8

13. Maximum Masses
Maximum take-off mass 1999 kg (4407 lb)
Minimum flight mass 1480 kg (3263 lb)
Maximum zero fuel mass 1900 kg (4189 lb)
Maximum landing mass 1999 kg (4407 lb)
14. Centre of Gravity Range

   Most forward flight CG:  
   - 2.315 m aft of datum plane at 1480 kg  
   - 2.315 m aft of datum plane at 1750 kg  
   - 2.420 m aft of datum plane at 1999 kg  
   Straight line variation between indicated points.

   Most rearward flight CG:  
   - 2.355 m aft of datum plane at 1480 kg  
   - 2.458 m aft of datum plane at 1645 kg  
   - 2.470 m aft of datum plane at 1999 kg  
   Straight line variation between indicated points.

15. Datum

   2.196 m forward of the most forward point of the root rib on the stub wing.  
   See Note 7

16. Control surface deflections

   Aileron
   - Trailing edge up: 25° ±2°  
   - Trailing edge down: 15° ±2°

   Elevator
   - Trailing edge up: 18.5° ±0.5°  
   - Trailing edge down: 15° ±1°

   Elevator Trim Tab
   - Nose up at elevator neutral: +28° ±5°  
   - Nose down at elevator neutral: -25° ±5°

   Rudder
   - Left: 20° ±1°  
   - Right: 25° ±1°

   Rudder Trim Tab
   - Trim RH at rudder neutral: +35° ±2°  
   - Trim LH at rudder neutral: -13° ±2°

   Flaps
   - Cruise flap setting: 0° ±1°  
   - Take-Off flap setting: 20° ±1°  
   - Landing flap setting: 38° ±1°

17. Levelling Means

   LH door frames, see note 7.

18. Minimum Flight Crew

   1 (Pilot)

19. Maximum Passenger Seating Capacity

   4

20. Baggage/ Cargo Compartments behind passenger seat row

   90 kg (198 lb.)

21. Wheels and Tyres

   Nose Wheel Tyre Size: 5.00-5  
   See AFM  
   Main Wheel Tyre Size: 6.00-6  
   See AFM

A.IV.  Operating and Service Instructions

1. Flight Manual

   Airplane Flight Manual Document No. 9.01.01-E


   Airplane Maintenance Manual Document No. 9.02.01


   incl. in AMM 9.02.01 Chapter 51-20


   incl. in AMM 9.02.01 Chapter 08

5. reserved
A.V.  Notes


2. Diamond Aircraft has been granted a 4 month extended validity time for the certification basis reference date.

3. Approved Noise Levels in accordance to the EASA data sheet for noise TCDS.N.A.639.

4. For approved software versions of Gamin G1000 Integrated Avionic System see DAI MSB 50-003, at latest issue.

5. Approved engine model for installation in the DA 50: Continental Centurion 3.0 (sales designation CD-300) The approved firmware and mapping is according to DAI MSB 50-002 at latest issue.

6. For additional approved Jet Fuel specifications see AFM Chapter 2.

7. For the approved aircraft leveling tool and procedure see AMM Chapter 8.

8. Flights into known or forecast icing conditions is approved, if the ice protection system in accordance to Design Change OÄM 50-011 is installed.

9. For serial number 50.C.Q.A.001 and subsequent produced in QDA/China under Chinese Production Certificate PC0069A-HD, EASA is considered state of design. Pending an agreement between EASA and CAAC, these aircraft serial numbers are not eligible for registration in the European Union (EU). Spareparts with a Chinese Authorized Release Certificate are not eligible for EU registered aircraft.
SECTION ADMINISTRATIVE

I. Acronyms & Abbreviations
   AFM  Airplane Flight Manual
   AMM  Airplane Maintenance Manual
   ICAO International Civil Aviation Organization
   IFR  Flight Rules under IMC
   LH   Left Hand
   MÄM Mandatory Design Change Advisory
   MSB  Mandatory Service Bulletin
   MSL  Mean Sea Level
   RH   Right Hand
   RPM  Revolutions per minute
   T/O  Take-Off
   VFR  Flight Rules under VMC

II. Type Certificate Holder Record

   Diamond Aircraft Industries GmbH
   Nikolaus-August-Otto-Straße 5
   2700 Wiener Neustadt
   Austria

III. Change Record

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<td>Initial Issue, 27 Aug 2020</td>
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<td>26 May 2021</td>
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