



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)

Diamond Aircraft Industries Inc.
1560 Crumlin Sideroad
London, Ontario N5V 1S2
Canada

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 m ²	(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		
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 forecast 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° +2-0°
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 |
| 2. Maintenance Manual | Airplane Maintenance Manual Document No. 9.02.01 |
| 3. Structural Repair Manual | incl. in AMM 9.02.01 Chapter 51-20 |
| 4. Weight and Balance Manual | incl. in AMM 9.02.01 Chapter 08 |
| 5. reserved | |



A.V. Notes

1. Serial Numbers Eligible: 50.002, 50.003, 50.006,
50.C.A.A.007 and subsequent airplanes produced in Austria,
50.C.C.A.001 and subsequent for airplanes produced in Canada,
50.C.Q.A.001 and subsequent for airplanes produced in China, see
note 9.
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 TCDSN.A.639.
4. For approved software versions of Garmin 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

Issue	Date	Changes	TC Issue No. & Date
Issue 01	27 Aug 2020	Initial Issue	Initial Issue, 27 Aug 2020
Issue 02	26 May 2021	A.II. 7. – Editorial correction. Major Change approval 10076557, initial issue A.III. 19 – Reference to Note 1B removed A.V. – Note 1A and 1B removed. Major Change approval 10076564, initial issue A.III. 20 – Baggage limitation added	Initial Issue, 27 Aug 2020
Issue 03	03 Aug 2022	Major Change Approval 10079414, initial issue A.II 2. – Cert Basis for Flight into Known icing added. A.III 12. - Flight into known or forecast icing conditions added as approved operation A.V. – Note 8 added	Initial Issue, 27 Aug 2020
Issue 04	28 Feb 2023	A.III 17 rereference corrected	Initial Issue, 27 Aug 2020
Issue 05	05 Feb 2024	Additional Manufacturer QDA/China Section A.I: Item 5: Manufacturer QDA/China added Section A.V: Note 1 amended Section A.V: Note 9 added Issue 04- TC issue no.& date corrected	Initial Issue, 27 Aug 2020
Issue 06	27 Nov 2024	Additional Manufacturer Diamond Aircraft Inc./Canada Section A.I: Item 3: Manufacturer Diamond Aircraft Inc./Canada added Section A.V: Note 1 amended	Initial Issue, 27 Aug 2020

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