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# 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
- 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 <sup>2</sup>	(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 <sub>A</sub>	at V <sub>NE</sub>	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 6.		
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
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 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.





## **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**

<b>Issue</b>	<b>Date</b>	<b>Changes</b>	<b>TC Issue No. &amp; Date</b>
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 Know icing added. A.III 12. - Flight into known or forcast icing conditions added as approved operation A.V. – Note 8 added	Initial Issue, 27 Aug 2020

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