TYPE-CERTIFICATE

DATA SHEET

NO. EASA.A.588

for
LIGHTWING AC 4

Type Certificate Holder
Light Wing AG

Riedenmatt 1
6370 Stans
Switzerland

For models: Lightwing AC4

| Lightwing AC4 GT
SECTION A: LIGHTWING AC4

A.I. General

1. Type/ Model/ Variant
   1.1. Type: Lightwing AC4
   1.2. Model: Lightwing AC4

2. Airworthiness Category: Restricted

3. Type Certificate Holder: Light Wing AG
   Riedenmatt 1
   6370 Stans
   Switzerland

4. Contracted DOA Holder (as per 21.A.2)
   Since 21 Februar 2019:
   Aircraft Design Certification GmbH
   Reichensteinstrasse 48
   69151 Neckargemünd
   Germany

5. Manufacturer: Light Wing AG
   Riedenmatt 1
   6370 Stans
   Switzerland

6. EASA Type Certification
   Application Date: 23 December 2011

A.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements: 23 December 2011

2. Airworthiness Requirements: Certification Specification for Light Sport Aeroplanes (CS-LSA), initial issue

3. Special Conditions: SC-LSA.2012-01 Requirements to the fuel system in LSA equipped with fuel injected engines

4. Exemptions: None

5. Deviations: None
6. Equivalent Safety Findings: None

7. Environmental Protection: Chapter 10 of ICAO Annex 16, Volume I. For details see TCDSN EASA.A.588

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Drawing list: LW-FO-Z-009-rev.0; or later approved revision
   Equipment & Equipment Qualification List: LW-FO-Z-012-EQL-rev.3 or later approved revision.

2. Description: The Lightwing AC4 features:
   - Conventional high strutted wing configuration;
   - Conventional strutted tail;
   - Single piston tractor engine;
   - Fixed pitch propeller;
   - 2 seats, side by side;
   - Fixed tricycle landing gear with steerable nose wheel and streamlined wheel covers.

3. Equipment: Minimum equipment list according to flight manual (LW-RL-Z-001-rev2, or later approved revision)

4. Dimensions: Total length: 6.97 m
   Maximum height: 2.67 m
   Maximum fuselage width: 1.25 m
   Wing span: 9.45 m
   Wing area: 12.70 m²

5. Engine
   5.1. Option 1: Rotax 912iS Sport, see note 1
      Certified as part of the aircraft
   5.2. Option 2: Rotax 912iSc Sport, see note 2
      EASA Engine TCDS No. E.121
   5.3. Limitations: None

6. Load factors +4g, -2g (clean)
   +2g, 0g (flapped)
7. Propeller

7.1. Model: Neuform, CR-75-(IP)-47-101.6
7.2. Manufacturer: Neuform Composites GmbH
7.3. Type Certificate: Certified as part of the airplane, see note 3
7.4. Number of blades: 3, ground adjustable
7.5. Diameter: 1.75m
7.6. Sense of Rotation: Right (in flight direction)
7.7. Weight 6.4kg

8. Fluids

8.1. Fuel: MOGAS EN 228 Super / EN 228 Super plus
   Alternative: AVGAS 100 LL = ASTM D910-76 = MIL-G5772
8.2. Oil: API classification “SG” or higher
8.3. Coolant: Conventional (see Rotax SI-91 i-001)

9. Fluid capacities

9.1. Fuel: 90 L (usable)
9.2. Oil: 3 L
9.3. Coolant system capacity: 1.5 L (approximately)

10. Air Speeds:
    
    $V_{SO}$ Stall speed flap DWN 76 km/h (41 kts)
    $V_{S1}$ Stall speed clean 82 km/h (44 kts)
    $V_F$ Flap speed 165 km/h (89 kts)
    $V_A$ Manoeuvring speed 176 km/h (95 kts)
    $V_C$ Cruise speed 176 km/h (95 kts)
    $V_{NE}$ Never exceed speed 210 km/h (113 kts)

11. Flight Envelope: Maximum altitude 12'000 ft

12. Approved Operations Capability: Day-VFR

13. Maximum Masses:
    Maximum permissible empty mass 405 kg
    Maximum take-off mass 600 kg

14. Centre of Gravity Range:
    Forward CG (max. 495kg) 2885 mm (12% MAC)
    Forward CG (@600kg) 2940 mm (16% MAC)
    Aft CG limit 3008 mm (21% MAC)

15. Datum(origin):
    X (aft positive) 1000mm in front of propeller flange
    Y (right positive) on centre line
    Z (up positive) 2000mm below propeller flange

16. Control surface deflections:
    Aileron 21.2° up, 23.6° down (+/- 2°)
    Flap 0°, 10°, 24° down (+/- 2°)
    Elevator 30° up, 30° down (+/- 2°)
    Rudder 25° left/right (+/- 2°)

17. Levelling Means:
    Design level attitude is defined by a 4° nose-down inclination of the fuselage centre beam.
18. Minimum Flight Crew: One (1) pilot (left seat)

19. Maximum Passenger Seating Capacity: One (1) passenger

20. Baggage/ Cargo Compartments: Maximum 25kg baggage Placed behind the seats, above the fuel tank

21. Wheels and Tyres: 
   - Main wheel: Beringer JAD01 with brake
   - Main wheel tyre: PAC02 15x6.00-6" 6ply
   - Nose wheel: Beringer JBA02
   - Nose wheel tyre: PAD01 4.00-6ply

A.IV. Operating and Service Instructions

1. Flight Manual
5. Illustrated Parts Catalogue

A.V Notes

1. The Rotax 912iS Sport for engine replacement must be accompanied by a EASA Form 1 stating conformity with LW-48-DDP-4001 of Lightwing AG.

2. The Rotax 912iSc Sport, EASA TCDS.E.121 is also eligible for installation which can be installed based on BRP-Rotax GmbH & CoKG EASA Form 1 for this engine.

3. The propeller eligible for propeller replacement must be accompanied by a EASA Form 1 stating conformity with ADxC-48-DDP-4002 of Lightwing AG

4. As of 10 May 2024, the model (all serials) is eligible for a standard Certificate of Airworthiness (CofA) if Major Change EASA 10084413 is embedded. Restricted CofA issued before that date remain valid.
SECTION B: LIGHTWING AC4 GT

B.I. General

1. Type/ Model/ Variant
   1.1. Type: Lightwing AC4
   1.2. Model: Lightwing AC4 GT

2. Airworthiness Category: Normal Category

3. Type Certificate Holder: Light Wing AG
   Riedenmatt 1
   6370 Stans
   Switzerland

4. Contracted DOA Holder (as per 21.A.2)
   Since 21 Februar 2019: Aircraft Design Certification GmbH
   Reichensteinstrasse 48
   69151 Neckargemünd
   Germany

5. Manufacturer: Light Wing AG
   Riedenmatt 1
   6370 Stans
   Switzerland

6. EASA Type Certification
   Application Date: 12 April 2021

B.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements: 12 April 2021

2. Airworthiness Requirements: Certification Specification for Light Sport Aeroplanes (CS-LSA), Amendment 1

3. Special Conditions: SC-LSA.2012-01 Requirements to the fuel system in LSA equipped with fuel injected engines

4. Exemptions: None
5. Deviations: None


7. Environmental Protection: Chapter 10 of ICAO Annex 16, Volume I. For details see TCDSN EASA.A.588

B.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Drawing list: ADxC-48-022-DL.A; or later approved revision
   Equipment & Equipment Qualification List: ADxC-48-022-EQL.rev17 or later approved revision.

2. Description: The Lightwing AC4 features:
   - Conventional high strutted wing configuration;
   - Conventional strutted tail;
   - Single piston tractor engine;
   - Fixed pitch propeller;
   - 2 seats, side by side;
   - Fixed tricycle landing gear with steerable nose wheel and streamlined wheel covers.
   - Retractable towing device

3. Equipment: Minimum equipment list according to flight manual (ADxC-18-022-AFM-rev.2 or later approved revision)

4. Dimensions: Total length: 6.97 m
   Maximum height: 2.67 m
   Maximum fuselage width: 1.25 m
   Wing span: 9.45 m
   Wing area: 12.70 m²

5. Engine: Rotax 915iSc3, EASA.E.121

5.1. Limitations: None

6. Load factors +4g, -2g (clean)
   +2g, 0g (flapped)
7. Propeller
   7.1. Model: MTV-34-1-A/175-200 (constant speed)
   7.2. Governor: MT P-835-98
   7.3. Manufacturer: MT-Propeller Entwicklung GmbH
   7.4. Type Certificate: EASA.P.049
   7.5. Number of blades: 3
   7.6. Diameter: 1.75m
   7.7. Sense of Rotation: Right (in flight direction)
   7.8. Weight: 9.5kg

8. Fluids
   8.1. Fuel: MOGAS EN 228 Super / EN 228 Super plus
           Alternative: AVGAS 100 LL = ASTM D910-76 = MIL-G5772
                           AVGAS UL91 (EASA_SIB_2011-01_1, SI-915 i-001)
   8.2. Oil: RON 424, RON 451 (SI-915 i-001)
   8.3. Coolant: Conventional (see Rotax SI-915 i-001)

9. Fluid capacities
   9.1. Fuel: 90 L (usable)
   9.2. Oil: 3 L
   9.3. Coolant system capacity: 1.5 L (approximately)

10. Air Speeds:
   
   \begin{align*}
   V_{50} & \quad \text{Stall speed flap DWN} \quad 79 \text{ km/h} \quad (43 \text{ kts}) \\
   V_{S1} & \quad \text{Stall speed clean} \quad 85 \text{ km/h} \quad (46 \text{ kts}) \\
   V_F & \quad \text{Flap speed} \quad 158 \text{ km/h} \quad (85 \text{ kts}) \\
   V_A & \quad \text{Manoeuvring speed} \quad 170 \text{ km/h} \quad (92 \text{ kts}) \\
   V_C & \quad \text{Cruise speed} \quad 176 \text{ km/h} \quad (95 \text{ kts}) \\
   V_{NE} & \quad \text{Never exceed speed} \quad 196 \text{ km/h} \quad (106 \text{ kts}) \\
   V_T & \quad \text{Max Tow speed} \quad 140 \text{ km/h} \quad (76 \text{ kts}) \\
   V_{Tm,10} & \quad \text{Min tow speed flap 10} \quad 105 \text{ km/h} \quad (57 \text{ kts}) \\
   V_{TW} & \quad \text{Max Winch op. speed} \quad 196 \text{ km/h} \quad (106 \text{ kts})
   \end{align*}

11. Flight Envelope: Maximum altitude 16'000 ft

12. Approved Operations Capability: Day-VFR
    Glider towing

13. Maximum Masses:
   
   \begin{align*}
   \text{Maximum permissible empty mass} & \quad 436.1 \text{ kg} \\
   \text{Minimum flying mass} & \quad 490 \text{ kg} \\
   \text{Maximum take-off mass} & \quad 630 \text{ kg} \\
   \text{Max. mass for AC4 towing 550kg} & \quad 850 \text{ kg} \\
   \text{Max. mass for AC4 towing 630kg} & \quad 700 \text{ kg}
   \end{align*}

14. Centre of Gravity Range:
   
   \begin{align*}
   \text{Forward CG (@ 630kg)} & \quad 2926 \text{ mm} \quad (14.5\% \text{ MAC}) \\
   \text{Forward CG (up to 600kg)} & \quad 2892 \text{ mm} \quad (12\% \text{ MAC}) \\
   \text{Aft CG limit} & \quad 3015 \text{ mm} \quad (21\% \text{ MAC})
   \end{align*}
15. Datum(origin):
   X (aft positive)  948mm in front of propeller flange
   Y (right positive) on centre line
   Z (up positive)  2000mm below propeller flange

16. Control surface deflections:
   Aileron  21.2° up, 23.6° down (+/- 2°)
   Flap  0°, 10°, 24° down (+/- 2°)
   Elevator  27° up, 27° down (+/- 2°)
   Rudder  25° left/right (+/- 2°)

17. Levelling Means:
   Design level attitude is defined by a 4° nose-down inclination of the fuselage centre beam.

18. Minimum Flight Crew:
   One (1) pilot (left seat)

19. Maximum Passenger Seating Capacity:
   One (1) passenger

20. Baggage/ Cargo Compartments:
   Maximum 25kg baggage Placed behind the seats, above the fuel tank

21. Wheels and Tyres:
   Main wheel  Beringer JAD01 with brake
   Main wheel tyre  PAC02 15x6.00-6” 6ply
   Nose wheel  Beringer JBA02
   Nose wheel tyre  PAD01 4.00-6ply

22. Towing
   Maximum weak link strength  6 kN
   Minimum tow rope length  40 m
   Maximum tow rope length  60 m
   Max. mass for towed glider  850 kg

B.IV. Operating and Service Instructions

1. Flight Manual
5. Illustrated Parts Catalogue

B.V Notes

1. The ESF-div-LSA.5-01 permits a maximum take-off mass of 650kg. Lightwing decided to extend the MTOM to 630kg. This extended MTOM is only applicable as long a retractable tow device is installed within the aircraft. An STC or major change with the removal of the towing equipment would reduce the MTOM back to CS-LSA. (600kg)
SECTION ADMINISTRATIVE

I. Acronyms & Abbreviations

AFM    Airplane Flight Manual
AMM    Airplane Maintenance Manual
CG     Centre of Gravity
CS-LSA Certification specification for Light Sport Aeroplanes
DWN    down IAS Indicated Airspeed
ICAO   International Civil Aviation Organization
kg     kilograms
km/h   kilometres per hour
kN     kilo Newton
MAC    Mean Aerodynamic Chord
RON/ROZ Research Octane Number/ Research Oktanzahl
SC     Special Condition
VFR    Visual Flight Rules

II. Type Certificate Holder Record

Issue 01/02:
Aircraft Design & Certification ltd.
Reichensteinstrasse 48
69151 Neckargemünd
Germany

Issue 03/04:
Light Wing AG
Riedenmatt 1
6370 Stans
Switzerland

From Issue 05:
TC Holder:
Light Wing AG
Riedenmatt 1
6370 Stans
Switzerland;

Contracted DOA Holder supporting TC since 21 February 2019:
Aircraft Design Certification GmbH
Reichensteinstrasse 48
69151 Neckargemünd
Germany
### III. Change Record

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<tr>
<td>Issue 01</td>
<td>17 June 2014</td>
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<td>24 June 2014</td>
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<td>- Minor Changes Approval 10056955 Proj 01 heating 02 March 2015&lt;br&gt;- Minor Changes Approval 1005950 Lightwing AC4_Proj 02 landing gear Date 29 February 2015&lt;br&gt;- Major Change Approval 10062701: Proj 03 Rotax 912iS Sport 24 July 2017&lt;br&gt;- Major Change Approval 10064190: Proj 06 Update from V01 to V02 20 December 2017&lt;br&gt;- AFM Approval 10065081 26 March 2018</td>
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<tr>
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<td>- Update of Chapter A.I. General by adding Type Certificate Holder and Contracted DOA Holder;&lt;br&gt;- Update of Administrative Section Cha. II by adding Contracted DOA Holder supporting TC since 21 February 2019</td>
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<td>- Major Changes Approval 10084413- introduction of LightWing AC4 GT model through Section B;&lt;br&gt;- Updated TC dated 02 July 2024;&lt;br&gt;- Update of Section A.V Notes by adding note 4) for the possibility of removal of ‘restricted’ for model AC4</td>
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