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

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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 m^2

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_{S0}	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
2. Maintenance Manual
3. Structural Repair Manual
4. Weight and Balance 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), Amentdment 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
6.	Equivalent Safety Findings:	Increase of Maximum Take-off Weight for CS LSA aircraft with a cable retracting device for towing operations. ESF-div-LSA.5-01. See note 1.
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 m^2
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:

V_{S0}	Stall speed flap DWN	79 km/h	(43 kts)
V_{S1}	Stall speed clean	85 km/h	(46 kts)
V_F	Flap speed	158 km/h	(85 kts)
V_A	Manoeuvring speed	170 km/h	(92 kts)
V_C	Cruise speed	176 km/h	(95 kts)
V_{NE}	Never exceed speed	196 km/h	(106 kts)
V_T	Max Tow speed	140 km/h	(76 kts)
V_{Tm_10}	Min tow speed flap 10	105 km/h	(57kts)
V_{TW}	Max Winch op. speed	196 km/h	(106 kts)

11. Flight Envelope: Maximum altitude 16’000 ft

12. Approved Operations Capability: Day-VFR
Glider towing

13. Maximum Masses:

Maximum permissible empty mass	436.1 kg
Minimum flying mass	490 kg
Maximum take-off mass	630 kg
Max. mass for AC4 towing 550kg	850 kg
Max. mass for AC4 towing 630kg	700 kg

14. Centre of Gravity Range:

Forward CG (@ 630kg)	2926 mm	(14.5% MAC)
Forward CG (up to 600kg)	2892 mm	(12% MAC)
Aft CG limit	3015 mm	(21% MAC)

15. Datum(origin):	X (aft positive) Y (right positive) Z (up positive).	948mm in front of propeller flange on centre line 2000mm below propeller flange
16. Control surface deflections:	Aileron Flap Elevator Rudder	21.2° up, 23.6° down (+/- 2°) 0°, 10°, 24° down (+/- 2°) 27° up, 27° down (+/- 2°) 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 Main wheel tyre Nose wheel Nose wheel tyre	Beringer JAD01 with brake PAC02 15x6.00-6” 6ply Beringer JBA02 PAD01 4.00-6ply
22. Towing	Maximum weak link strength Minimum tow rope length Maximum tow rope length Max. mass for towed glider	6 kN 40 m 60 m 850 kg

B.IV. Operating and Service Instructions

1. Flight Manual
2. Maintenance Manual
3. Structural Repair Manual
4. Weight and Balance 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

Issue	Date	Changes
Issue 01	17 June 2014	Initial Issue
Issue 02	24 June 2014	Correction
Issue 03	6. August 2015	Transfer of TC holder
Issue 04	10. July 2018	- Minor Changes Approval 10056955 Proj 01 heating 02 March 2015 - Minor Changes Approval 1005950 Lightwing AC4_Proj 02 landing gear Date 29 February 2015 - Major Change Approval 10062701: Proj 03 Rotax 912iS Sport 24 July 2017 - Major Change Approval 10064190: Proj 06 Update from V01 to V02 20 December 2017 - AFM Approval 10065081 26 March 2018
Issue 05	09. April 2019	- Update of Chapter A.I. General by adding Type Certificate Holder and Contracted DOA Holder; - Update of Administrative Section Cha. II by adding Contracted DOA Holder supporting TC since 21 February 2019
Issue 06	02 July 2024	- Major Changes Approval 10084413- introduction of LightWing AC4 GT model through Section B; - Updated TC dated 02 July 2024; - Update of Section A.V Notes by adding note 4) for the possibility of removal of 'restricted' for model AC4

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