Civil Aviation Authority United Kingdom



TYPE-CERTIFICATE DATA SHEET

UK.TC.A.00085

for

E1 Antares

Type Certificate Holder Lange Aviation GmbH Brüsseler Straße 30 66482 Zweibrücken Germany

Model(s):

Issue: Date of issue: E1 Antares Antares 18T 2 15 January 2024

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Se	ction 1 E1 Antares	
I. 1.	General Type/ Model/ Variant 1.1 Type: 1.2 Model:	E1 Antares E1 Antares
2.	Airworthiness Category	Utility
3.	Manufacturer	Lange Flugzeugbau GmbH Brüsseler Straße 30 66482 Zweibrücken Germany
		Lange Aviation GmbH Brüsseler Straße 30 66482 Zweibrücken Germany
4.	EASA Type Certification Application Date	30 December 1995
5.	EASA Type Certification Date	14 July 2006
II.	Certification Basis	
1.	Reference Date for determining the applicable requir	ements Defined by LBA letter I 412-894/96, dated 17 January 1996
2.	Airworthiness Requirements	Joint Airworthiness Requirements for Sailplanes and Powered Sailplanes (JAR 22), Change 6, August 2001
3.	Special Conditions	Special Condition for the Installation of Electrical Power in Powered Sailplanes, issued 24. April 1998 Special Condition for the substantiation of the electrical system of powered sailplanes, I 334-MS 92, issued 15. September 1992
4.	Exemptions	None
5.	Deviations	None
6.	Equivalent Safety Findings	None
7.	Environmental Protection	ICAO Annex 16, Chapter 10

III. Technical Characteristic and Operating Limitations

1.	Type Design Definition	List of the drawing file 30 June 2006	es E1 Antares, issued
2.	Description	Single-seat, shoulder	-winged Self launching
		powered sailplane wi composite constructio with fin and elevator, upper wing surface, v retractable landing ge suspension, 20 m spa	th electrical engine, CRP/GRP- on, T-shaped horizontal tail plane Schempp Hirth type airbrakes on vater ballast tanks in the wing, ear equipped with brakes and spring an with winglets.
3.	Equipment	Min. Equipment:	
		1 Air speed indicator	(up to 160 kts / 300 km/h)
		1 Altimeter	
		1 4-Point harness (sy	mmetrical)
		1 Engine Control Unit	t
		1 VHF Transceiver	
		1 Headset	
		1 Rear View Mirror	
		1 Parachute	
		Additional Equipment Manual	refer to Flight and Maintenance
4.	Dimensions	Span	20.0 m
		Wing area	12,52 m ²
		Length	7,4 m
_			
5.	Engine [electrical propulsion]		n n of English EM 40
	5.1 Model	Lange EA 42 consisti	ng of Engine EM 42,
	5.2 Turne Cartificate		
	5.2 Type Certificate	1003 NO. EASA.E.U	15
	5.5 Max. revs.		
	5.5 Max over speed revs	1750 RPM	
	5.6 Max motor temperature	120°C	
	5.7 Max. power electronics temp.	85°C	
6.	Propeller		
	6.1 Model	LF-P42	
	6.2 Type Certificate	TCDS No. EASA.P.0	15
	6.3 Number of blades	2	
	6.4 Diameter	2 m	
	6.5 Sense of Rotation	clockwise	
7.	Battery [electrical propulsion]		
	7.1 Model	E1-A150 Batteriemoo	lul G5
	7.2 Battery capacity	39 Ah, 41 Ah	
	7.3 Non-usable battery capacity	1 Ah	
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	7.4	Max battery discharge temperature	55°C	
	75	Min battery discharge temperature	10°C	
	7.6	Max battery charge temperature	10°C	
	7.0		40 0	
	1.1	Min battery charge temperature	19°C	
	7.8	Range of permissible cell voltage	3,0 V – 4,1 V	
8	Launching F	Hooks	Safety book Eur	ona G 88"
0.	Laanoning		LBA Datasheet N	10, 60, 230/2
			LDA Dalasheel N	0.00.230/2
9.	Weak Links		Ultimate Strength	n:
			 for winch and a max. 750 daN 	uto-tow launching
			- for aero-tow ma	ıx. 750 daN
10.	Load Factor	S	+5,30 / -2,65 up 1	to V _A
			+4,0 / -1,5 up to	VNE
11.	Air Speeds			
	11.1	1 Manoeuvring speed	VA	105 kts / 195 km/h
	11.2	2 Never exceed speed		151 kts/ 280 km/h
	11 3	3 Maximum permitted speeds		
		- in strong turbulence	Vra	105 kts / 195 km/h
		- in aero-tow	VT	100 kts / 185 km/h
		- in winch-launch	Vw	86 kts / 160 km/h
		- for gear operation	VLO	105 kts / 195 km/h
		- for extracting engine	V _{PO max}	65 kts / 120 km/h
		- with wing flaps at pos. +1, +2	VFE	113 kts / 210 km/h
12.	Approved O	perations Capability	Approved for VFI Cloud flying acco Manual with rest ballast. Aerobatic manoe	R-flying in daytime. ording to the specifications in the Flight ricted maximum mass and without water euvres not permitted.
13.	Launch met	hods	Aero tow	
			Winch launch	
			Self-launch	
14.	Maximum M	lasses		
	14.1	1 Maximum Take-off Mass	660 kg	
	14.2	2 Max. Mass of non-lifting parts	340 kg	
45		14 D	F	
15.	Centre of G	ravity Range	Forward Limit 29	U mm aft of datum point
			Rearward Limit 3	98 mm aft of datum point
16.	Datum		The intersection edges of the inne (see also Mainter	of the projected leading er wings at the center of the fuselage nance Manual)
17.	Levelling Me	eans	Upper side of fus Slope 1000 : 17,	elage boom placed at 5
18.	Control Surf	ace Deflections	Refer to Mainten	ance Manual
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19.	Minimum Flight Crew	1
20.	Maximum Passenger Seating Capacity	0
21.	Baggage/ Cargo Compartments	8 lbs / 15 kg
22.	Lifetime limitations	Refer to Maintenance Manual
IV.	Operating and Service Instructions	
1.	Flight Manual	Flughandbuch für den Motorsegler E1 Antares, Issue 1 December 2004, or later EASA approved revisions
2.	Maintenance Manual	Wartungshandbuch für den Motorsegler E1 Antares, Issue 22 June 2006, or later EASA approved revisions
3.	Structural Repair Manual	Wartungshandbuch für den Motorsegler E1 Antares, Issue 22 June 2006, or later approved revisions
4.	Operating Manual and Maintenance Manual for Engi	ne
		Betriebshandbuch für den Elektromotor EA-42, Issue 12 August 2005, or later approved revisions
5.	Operating Manual and Maintenance Manual for Prop	peller
		Betriebshandbuch für den Propeller LF-P42, Issue 23 August 2005, or later approved revisions
6.	Operating Manual for the Launching Hook	Betriebshandbuch für die TOST
		Schleppkupplung , latest revision
V .	Notes	

- 1. Manufacturing is confined to industrial production.
- 2. All parts exposed to sun radiation except the areas for markings and registration must have a white colour surface

I. General 1. Type/ Model/ Variant 1.1 Type: E1 Antares 1.2 Model: Antares 18T 2. Airworthiness Category Utility 3. Manufacturer Lange Flugzeugbau GmbH Brüsseler Straße 30 66484 Zweibrücken Germany Lange Aviation GmbH Brüsseler Straße 30 66484 Zweibrücken Germany EASA Type Certification Application Date 15 March 2006 4. 5. EASA Type Certification Date 07 June 2023 II. **Certification Basis** 1. Reference Date for determining the applicable requirements 15 March 2006 2. Joint Airworthiness Requirements for **Airworthiness Requirements** Sailplanes and Powered Sailplanes (JAR 22), Change 6, August 2001 3. Special Conditions None 4. Exemptions None 5. Deviations None 6. **Equivalent Safety Findings** JAR 22.335: The determination of V_D was done according to the report "Concerning the deduction of design maximum speed V_D in the airworthiness requirements LFS, LFSM, OSTIVAS and JAR 22" of LBA Braunschweig, 11.09.2001 7. **Environmental Protection** The aircraft is in accordance with the provisions of Article 9.2 of Regulation 2018/1139 without the need to comply with the Standard of ICAO Annex 16, Volume I, Chapter

Section 2

Antares 18T

10, by virtue of being a self-sustaining powered sailplane.

III. **Technical Characteristic and Operating Limitations**

1.	Туре	e Desigr	n Definition	List of the drawing file 27 April 2023	s Antares 18T, issued	
2.	2. Description Single-seat, shoulder winged self-sustain powered sailplane with an air-cooled two-cylinder, stroke engine (see also Note 3), CRP/GRP-compo construction, T-shaped horizontal tail plane with fin elevator, Schempp-Hirth type airbrakes on upper w surface, water ballast tanks in the wing, retractable landing gear equipped with brakes and spring suspension, 18 m span with winglets.			winged self-sustain h an air-cooled two-cylinder, two- to Note 3), CRP/GRP-composite d horizontal tail plane with fin and rth type airbrakes on upper wing tanks in the wing, retractable d with brakes and spring n with winglets.	l	
3.	Equi	pment		Min. Equipment: 1 Air speed indicator (1 Altimeter 1 Compass	up to 160 kts / 300 km/h)	
				1 4-Point harness (syr	mmetrical)	
				1 Engine Control Unit	Ilec MCU Antares	
				1 VHF Transceiver		
				1 Headset		
				1 Rear View Mirror		
				Additional Equipment Manual	refer to Flight and Maintenance	
4.	Dime	ensions		Span	18,0 m	
				Wing area	11,9 m²	
				Length	7,4 m	
5.	Engi	ne				
		5.1	Model	Solo 2350C		
		5.2	Type Certificate	TCDS No. EASA E.21	9	
		5.3	Limitations			
			Max. revs	6500 RPM		
		- /	Max. continuous revs	6100 RPM		
		5.4	Maximum Continuous Power	20 kW at 6100 RPM		
6.	Prop	eller				
	6.1 N	Nodel		MT 136 L 67 -1AN		
	6.2 1	Гуре Се	ertificate	TCDS No. EASA P.00)6 Issue: 04	
	6.3 N	lumber	of blades	2		
	6.4 E	Diamete		1.36 m		
	6.5 \$	Sense o	f Rotation	counter clockwise		
7.	Fuel	capacit	ties			
	7.1	Fank in '	the fuselage	16,5 I		
	7.2 1	Non-usa	able fuel	0,2		
8	1 9115	uchina L	Hooks	Safety book Europa	2.88"	
0.	Laul	ioning I		I BA Datasheet No. 60	2 230/2	
9	Wea	k Links		Ultimate Strength		
э.				- for winch and car lau	Inch	
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		750 daN	
		- for aero-tow ma	ax. 750 daN
10.	Load Factors	+5,30 / -2,65 up	to V _A
		+4,0 / -1,5 up to	V _{NE}
11.	Air Speeds		
	11.1 Manoeuvring speed	VA	105 kts / 195 km/h
	11.2 Never exceed speed	V _{NE}	151 kts / 280 km/h
	11.3 Maximum permitted speeds		
	 in strong turbulence 	V _{RA}	105 kts / 195 km/h
	- in aero-tow	VT	100 kts / 185 km/h
	- in winch-launch	Vw	86 kts / 160 km/h
	- for gear operation	VLO	105 kts / 195 km/h
	 for extracting engine 	VPO max	59 kts / 110 km/h
	- with wing flaps at pos. +1, +2	Vfe	113 kts / 210 km/h
10	Approved Operations Canability	Approved for V/E	D flying in douting
12.	Approved Operations Capability	Approved for VF	R-inying in dayume
		Cloud liying acc	triated maximum mass and without water
		hallast	incled maximum mass and without water
		Dallast	autor are not normitted
		Aeropatic manoe	euvres are not permitted.
13.	Launch methods	Aero tow	
		Winch launch	
		Car launch	
14.	Maximum Masses		
	14.1 Maximum Take-off Mass	600 kg	
	14.2 Max. Mass of non-lifting parts	340 kg	
		0	
15	Centre of Gravity Range	Forward Limit 20	00 mm aft of datum point
10.	Contro of Cravity Range	Deenword Limit	100 mm oft of dotum point
		Rearward Linit 4	
16	Datum	The intersection	of the projected leading
10.	Datam	edges of the inne	er wings at the center of the fuselage
17	Lovelling Meene	Lippor oido of fu	cologo boom placed at
17.	Levening means		-
		Slope 1000 : 17,	5
10	Control Surface Deflections	Defer to Mainton	Anna Manual
10.	Control Surface Deflections	Refer to Mainter	
19	Minimum Flight Crew	1	
10.			
20.	Maximum Passenger Seating Capacity	0	
21.	Baggage/ Cargo Compartments	8 lbs / 15 kg	
		-	
22.	Lifetime limitations	Refer to Mainter	nance Manual

IV. Operating and Service Instructions

	OFFICIAL - Public. This information has	been cleared for unrestricted distribution.	Section 2 Antares 18T
1.	Flight Manual	Flughandbuch für den Motorsegle	r Antares
		18T, Issue 01 June 2023, or later	approved revisions
2.	Maintenance Manual	Wartungshandbuch für den Motors	segler
		18T, Issue 01 June 2023, or later	approved revisions
3.	Structural Repair Manual	Wartungshandbuch für den Motors	segler
		Antares 18T Chapter 9, Issue 01 approved revisions	June 2023, or later
4.	Operating Manual and Maintenance Manual for Eng	ine	
		Handbuch für den Motor Solo Typ approved version	e 2350C, latest
5.	Operating Manual and Maintenance Manual for Prop	peller	
		Operation and Installation Manual approved revisions	, Issue 20 or later
6.	Operating Manual for the Launching Hook	Betriebshandbuch für die TOSTSo G 88, latest revision	chleppkupplung Europa
ν.	Notes		
1.	Manufacturing is confined to industrial production.		

- All parts exposed to sun radiation except the areas for markings and registration must have a white colour 2. surface
- Operation with the engine removed is permitted. 3.

Section 3 Administration

I. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
Ah	Amp-hour
CAA	Civil Aviation Authority
CAA CZ	Civil Aviation Authority Czech Republic
DaN	Decanewton
EASA	European Union Aviation Safety Agency
Kg	Kilogram
Km/h	Kilometers per hour
kts	Knots
L	Litres
lbs	Pounds
m	Meters
RPM	Revolutions per minute
ТС	Type Certificate
TCDS	Type Certificate Data Sheet
ТСН	Type Certificate Holder
VFR	Visual Flight Rules

Section 3 Administration

II. Type Certificate Holder Record

TCH RecordPeriodLange Aviation GmbHPresent. No changes.Brüsseler Straße 3066484 ZweibrückenGermanyGermany

III. Amendment Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	17 Jul 2023	This datasheet supersedes EASA.A.092 in the UK. All technical data as per EASA.A.092 issue 3. Introduction of new model Antares 18T; correction of Section 1 III. 16.	lssue 1 17 Jul 2023
2	15 Jan 2024	Correction of Section 2, III.2 and 3. Correction of Section 2, V. by addition of Note 3. Equivalent to EASA.A.092 Issue 4.	-

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