



European Aviation Safety Agency

EASA
TYPE-CERTIFICATE
DATA SHEET

No. EASA.R.510

for

AW189

Type Certificate Holder
AGUSTAWESTLAND S.p.A.

Piazza Monte Grappa, 4
00195 Roma - Italy

For Models: AW189

Intentionally left blank

TABLE OF CONTENTS

SECTION 1: AW189	4
I. General	4
1. Type/ Variant or Model.....	4
2. Airworthiness Category	4
3. Manufacturer	4
4. EASA Certification Application Date	4
5. EASA Type Certification Date	4
II. Certification Basis	4
1. Reference Date for determining the applicable requirements.....	4
2. Airworthiness Requirements	4
3. Special Conditions	4
4. Exemptions	4
5. Deviations	4
6. Equivalent Safety Findings	4
7. Requirements elected to comply	5
8. Environmental Protection Standards.....	5
III. Technical Characteristics and Operational Limitations	5
1. Type Design Definition	5
2. Description	5
3. Equipment	5
4. Dimensions.....	5
5. Engine	5
6. Fluids (Fuel/ Oil/ Additives)	6
7. Fluid capacities.....	6
8. Air Speeds Limits.....	7
9. Rotor Speed Limits	7
10. Maximum Operating Altitude and Temperature.....	7
11. Operating Limitations.....	7
12. Maximum Weight.....	7
13. Centre of Gravity Range	7
14. Datum.....	7
15. Levelling Means.....	8
16. Minimum Flight Crew	8
17. Maximum Passenger Seating Capacity	8
18. Passenger Emergency Exit.....	8
19. Maximum Baggage/ Cargo Loads.....	8
20. Rotor Blade control movement.....	8
21. Auxiliary Power Unit (APU)	8
22. Life- limited parts	8
23. Wheels and Tyres.....	8
IV. Operating and Service Instructions	8
1. Flight Manual	8
2. Maintenance Manual	8
3. Structural Repair Manual	9
4. Weight and Balance Manual	9
5. Illustrated Parts Catalogue.....	9
6. Service Letters and Service Bulletins.....	9
7. Required Equipment	9
V. Notes	10
SECTION: ADMINISTRATIVE	12
I. Acronyms and Abbreviations	12
II. Type Certificate Holder Record	12
III. Change Record	12

SECTION 1: AW189

I. General

1. Type/ Variant or Model	
1.1 Type	AW189
1.2 Model	AW189
1.3 Variant	N/A
2. Airworthiness Category	Large Rotorcraft, Category A and B
3. Manufacturer	AGUSTAWESTLAND S.p.A. (see Note 2)
4. EASA Certification Application Date	May 12 nd , 2011
5. EASA Type Certification Date	February 7 th 2014

II. Certification Basis

1. Reference Date for determining the applicable requirements	May 12 th , 2011
2. Airworthiness Requirements	CS-29 Amendment 2, dated 17 November 2008 CS-29 Amendment 3, dated 11 December 2012 (for rescue hoist installation and affected areas only)
3. Special Conditions	“Automatic Search Modes (ASM) certification” (see CRI B-03) “Extended Take-Off Power Duration (EP, 30 min All Engines Operating)” (see CRI E-07) “Loss of Oil from Gearboxes Utilising a Pressurised Lubrication System” (see CRI E-09) “HIRF Protection” in accordance with JAA Interim Policy INT/POL/27&29/1, issue 3 dated 01-10- 2003 (see CRI F-01) “Essential APU Installation in Large Rotorcraft” (see CRI J-01)
4. Exemptions	N/A
5. Deviations	Temporary Deviation on CS29.1305(a)(25) and CS1309(c) (“MGB OEI 30 seconds rating counter and automatic reduction”, as per CRI F-17) (see Note 7)
6. Equivalent Safety Findings	“Passenger access to each Emergency Exit” (see CRI D-03) “Passenger Emergency Exits – other than Side-Of-Fuselage” (see CRI D-04) “Emergency Exit Signs” (see CRI D-06) “Ditching Emergency Exits for Passengers” (see CRI D-07)

- “Ferry Flight Configuration” (see CRI D-08)
- “Main Aisle Width” (see CRI D-10)
- “Hoist Installation” (see CRI D-11)
- “Power Index Indicator” (see CRI F-15)
- “H-V Envelope and RFM Charts” (see CRI F-16)
- “Airspeed indicators green arcs” (see CRI G-02)
- “Main Gearbox OEI 30 seconds counter and automatic reduction” (see CRI F-18) (see Note 8)

7. Requirements elected to comply CS36 Amdt3 (See CRI A-01)

8. Environmental Protection Standards

Noise Requirements

Chapter 1 of ICAO Annex 16, Volume I, amendment 10, Part II to the Chicago Convention (and as implemented in CS-36 Amendment 3).

(For details of the certification noise levels see TCDSN-EASA.R.510)

Emission requirements

Chapter 2 of ICAO Annex 16 Volume II, amendment 6, Part II to the Chicago Convention (as implemented in CS-34 Amendment 1).

III. Technical Characteristics and Operational Limitations

- 1. Type Design Definition AW Doc. No. 189G0000P002
- 2. Description Large twin-engine helicopter having a conventional configuration with a 5-blades fully articulated main rotor, a 4-blades fully articulated tail rotor and a tricycle retractable wheel landing gear.
- 3. Equipment As per compliance with certification basis and included in Type Design Definition Document
- 4. Dimensions
 - 4.1 Fuselage
 - Length 14600 mm
 - Width 3020 mm
 - Height 4040 mm
 - 4.2 Main Rotor 5 blades Diameter 14600 mm
 - 4.3 Tail Rotor 4 blades Diameter 2900 mm
- 5. Engine
 - 5.1 Model General Electric CT7-2E1
 - 5.2 Type Certificate EASA IM.E.010 (FAA E8NE)
 - 5.3 Limitations Ref. to GE Operating Instructions No. GEK112766
 - 5.3.1 Installed Engine Limits

RATING		MAX ITT [°C]	MAX NG [% - RPM]	MAX NF [% - RPM]
AEO	Continuous	942	102.7 - 42843	104 - 20192
	Take-off 5 min	968	102.7 - 42843	
OEI	Continuous	968	102.7 - 42843	104 - 20192
	2.5 min	1078	105 - 41905	

5.3.2 Transmission Torque Limits

RATING		MAX TORQUE [%]	INPUT SPEED [RPM]
AEO	Maximum Continuous	2 x 100	21420
	30 min	2 x 116 (*)	21420
OEI	Maximum Continuous	1 x 135	21420
	2.5 min	1 x 164 (**)	21420

(*) For airspeeds less than 90 KIAS. For airspeeds greater than 90KIAS refer to RFM.

(**) Between 155% and 164% is allowed for 30 sec and once per 2.5 min event

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel		JET A, JET A1, JP5, JP8, JP8+100 (for code no. specification and more details refer to Rotorcraft Flight Manual)
6.2 Oil	Transmissions	AEROSHELL TURBO OIL 555 (DoD-L-85734). No different specification or brand is allowed)
	Engine	Ref. to GE Operating Instructions No. GEK112766
	APU	MIL-PRF-23699, MIL-PRF-7808
	Hydraulics	MIL-PRF-83282, MIL-PRF-5606 (as alternative)
6.3 Additives		Kathon FP 1.5, MIL-DTL-27686, MIL-DTL-85470, MIL-I-25017, Biobor JF
6.4 Coolant		R134a

7. Fluid capacities

7.1 Fuel

	Total A/C capacity litres (Kg (*))	Unusable litres (Kg (*))
Two main fuel tanks (LH and RH)	1303 (1042)	24 (19)
Two main fuel tanks (LH and RH) plus Forward Tanks	1541 (1233)	28 (22)
Two main fuel tanks (LH and RH) plus Auxiliary Central Tank	1825 (1460)	30 (24)
Two main fuel tanks (LH and RH) plus Forward Tanks plus Auxiliary Central Tank	2063 (1650)	34 (27)
Extended Range (see Note 5) Two main fuel tanks (LH and RH) Plus under belly tanks	2569 (2055)	9 (7)

(*) Considering a medium density between different fuels of 0.8Kg/l

7.2 Oil

	Quantity litres (kg)
ENGINE (each)	min 3.6 (3.59) - max 5.5 (5.49)
MAIN GEARBOX (min/max)	min 21.5 (21.46) - max 27 (26.95) (24.5 + 2.5 for oil cooler, oil ducts and filter)
INTERMEDIATE GEARBOX	1.22 (1.217)
TAIL GEARBOX	1.87 (1.866)
HYDRAULIC (per each Power Control Module)	3.20 (2.72)

7.3 Coolant system capacity 2.9 kg

8. Air Speeds Limits
- VNE_{Power On AEO} 169 kts
 - VNE_{Power On OEI} 139 kts
 - VNE_{Power Off} 120 kts
 - VNE_{(VFR Night / IFR Single Pilot) Power On AEO} VNE_{Power On AEO}-20 kts
- For reduction of the VNE with altitude, OAT and weight, see RFM.

9. Rotor Speed Limits

Power On AEO		
Condition	(RPM)	(%)
Minimum Continuous	284.75	100.0
Maximum Continuous	296.14	104.0
Power On OEI		
Condition	(RPM)	(%)
Minimum Cautionary	256.28	90.0
Minimum Continuous	284.75	100.0
Maximum Continuous	296.14	104.0
Power Off		
Condition	(RPM)	(%)
Minimum Continuous	256.28	95.0
Maximum Continuous	313.23	110.0

See RFM for additional rotor speed limitations

10. Maximum Operating Altitude and Temperature

- 10.1 Altitude
- Maximum operating altitude 10000 ft
(pressure/density altitude whichever occurs first)
 - Maximum Take-off and Landing altitude 8000 ft
(pressure/density altitude whichever occurs first)

- 10.2 Temperature
- 40°C ÷ +55°C (ISA+40°C)
 - 15°C ÷ +55°C (ISA+40°C) for Cat. A operations

For variation of Temperature limitations with altitude, see the RFM and applicable supplement

11. Operating Limitations

VFR/IFR day and night operations in non-icing conditions

Flight into known IMC condition is prohibited for single pilot operations in IFR.

12. Maximum Weight

- 12.1 Take-off and Landing 8300 kg (see Note 4)
- 12.2 Taxi and Towing 8350 kg (see Note 4)

13. Centre of Gravity Range

Refer to the approved RFM

14. Datum

Longitudinal Datum (STA 0) is located at 2830 mm forward to the front jack point

On the Extended Range configuration (see Note 5) the longitudinal datum line (STA 0) is located at 3009 mm forward to the front jack point.

	Lateral Datum (BL 0) is located at +/- 275 mm inboard of LH/RH front jack points
15. Levelling Means	Plumb line from ceiling reference point to index plate on floor of passenger cabin
16. Minimum Flight Crew	One (1) for VFR day and Two (2) for VFR night and IFR. Single pilot VFR night and IFR operations are allowed under conditions and limitations included in the Supplement 3 of the RFM. For Cat. A operations, two (2) pilots are required if take-off and landing is to be carried out from the left seat. For NVG operations, two (2) pilots or one (1) pilot and one (1) crew member are required. Both pilot and crew member must be equipped with NVGs (see Note 3).
17. Maximum Passenger Seating Capacity	19
18. Passenger Emergency Exit	10, 1 for pilot, 1 for co-pilot, 4 on each side of the passenger cabin
19. Maximum Baggage / Cargo Loads	300Kg located in the Baggage/Cargo compartment
20. Rotor Blade control movement	For rigging information, refer to Maintenance Manual
21. Auxiliary Power Unit (APU)	one Microturbo model e-APU60 model 342 (TSO EASA.21O.10045083)
22. Life-limited parts	refer to the Airworthiness Limitation Section (ALS) of the Maintenance Manual
23. Wheels and Tyres	MLG wheel assembly with 24x7.7 tubeless tyres NLG wheel assembly with 14.5x5.5 tubeless tyres

IV. Operating and Service Instructions

1. Flight Manual	Doc. No. 189G0290X002 approved by EASA on 31/01/2014 or later approved revision (see Note 6)
2. Maintenance Manual	“AW189 Maintenance Planning Information” Doc. No. 89-A-AMPI-00-P (includes Chapter 4 ALS approved by EASA on 05/02/2014 or later approved revision and Chapter 5 with Scheduled Maintenance Requirements) “Maintenance Review Board Report for AW189 Helicopter” Doc. No. 189G0000M006 “AW189 Maintenance Publication” Doc. No. 89-A-AMP-00-X “AW189 Material Data Information” Doc. No. 89-A-AMDI-00-X “AW189 Corrosion Control Publication” Doc. No. 89-A-ACCP-00-X

	<p>“AW189 Fault Isolation Publication” Doc. No. 89-A-AFIP-00-X</p> <p>“AW189 Wiring Data Publication” Doc. No. 89-A-AWDP-00-X</p> <p>Component Maintenance Manual as applicable</p>
3. Structural Repair Manual	<p>“AW189 Structural Repair Publication” Doc. No. 89-A-ASRP-00-X</p> <p>“AW189 Component Repair and Overhaul Publication” Doc. No. 89-A-CR&OP-00-X</p>
4. Weight and Balance Manual	refer to the Section 6 of the RFM and applicable supplements
5. Illustrated Parts Catalogue	<p>“AW189 Illustrated Tool and Equipment Publication” Doc. No. 89-A-ITEP-00-X</p> <p>“AW189 Illustrated Part Data” Doc. No. 89-A-IPD-00-X</p>
6. Service Letters and Service Bulletins	As published by AgustaWestland
7. Required Equipment	<p>The installation of the followings is mandatory for IFR/VFR night Single Pilot Operations (see Supplement 3 of the RFM):</p> <ul style="list-style-type: none">– Quick Reference Handbook (QRH) Doc. No. 189G0290X003, latest issue.– Map/QRH holder P/N 8G2510F00211.– Traffic Advisory System TCAS II (see RFM Supplement 8). <p>The installation of the followings is mandatory for Ditching Operations (see RFM Supplement 6):</p> <ul style="list-style-type: none">– Life rafts (life rafts P/N 8G2560F00511 have been approved for use by AW. The use of other life raft installations must be in accordance with CS/FAR 29 and must be approved)– Survival type Emergency Locator Transmitter– Life preservers (the following life preservers installations have been approved by AW: 8G2560F00611, 8G2560F00711, 8G2560F00811. Different life preserver installations must be in accordance with CS/FAR 29 and must be approved). <p>The installation of the followings is mandatory for Night Vision Goggles Operations (see RFM Supplement 14):</p> <ul style="list-style-type: none">– Aviator’s Night Vision Goggles as specified in 189G3360A001 “AW189 NVG Compatibility Reference Handbook”– Helmet with NVG mount suitable for NVG Model being used– Cockpit/Cabin physical separation device as defined in 189G3360A001 “AW189 NVG Compatibility Reference Handbook”. <p>Refer to EASA Approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment.</p>

V. Notes

1. Serial Numbers

49007 and subsequent manufactured by
AgustaWestland S.p.A. – Italy

89001 and subsequent manufactured by
AgustaWestland S.p.A. – Italy (see Note 5)

91001 and subsequent manufactured by
AgustaWestland Ltd. – UK

92001 and subsequent manufactured by
AgustaWestland Ltd – UK (see Note 5)

2. Manufacturer

AGUSTAWESTLAND S.p.A
Piazza Monte Grappa, 4
00195 Roma - Italy

AGUSTAWESTLAND Ltd
Lysander Road,
Yeovil, Somerset
BA20 2YB, UK

3. NVG Operations

Night Vision Goggle Operations are permitted according to RFM 189G0290X002 Supplement No. 14. The aircraft configuration involving internal/external emitting/reflecting equipment approved for use with NVG is described in the Report N. 189G3360A001 « AW189 NVG Compatibility Reference Handbook ». Subsequent modifications and deviations to the NVG helicopter configuration shall be managed in accordance with AgustaWestland document 189G3360E001 « AW189 Helicopter NVG Policy »

4. Maximum Weight

Installation of Drawing 8G0000F00111, according to RFM Supplement 21, permits operations at the following weight:

4.1 Take-off and Landing 8600 kg

4.2 Taxi and Towing 8650 kg

5. Extended Range Configuration

According to RFM Supplement 22, as per Drawing 8G0000X00831 and Drawing 8G0000X00931

6. Rotorcraft Flight Manual Revision

RFM 189G0290X002 Issue 1 Rev.2 and subsequent approved revisions are not applicable to AW189 aircraft up to s/n 49022 until embodiment of BT 189-013 “*Avionic Flight Software Release Phase 2.0 Installation*”

For aircraft up to s/n 49022 not embodying BT 189-013, RFM 189G0290X002 Issue 1 Rev.1 remains applicable.

7. Temporary Deviation

Temporary Deviation on CS29.1305(a)(25) and CS1309(c) "*MGB OEI 30 seconds rating counter and automatic reduction*" (as per CRI F-17) is applicable to AW189 aircraft up to s/n 49022 until embodiment of BT 189-013 "*Avionic Flight Software Release Phase 2.0 Installation*".

8. Equivalent Safety Finding

The applicability to AW189 aircraft up to s/n 49022 of the Equivalent Safety Finding "*Main Gearbox OEI 30 seconds counter and automatic reduction*", as per CRI F-18, is subject to the previous accomplishment of the applicable parts of BT189-013 "*Avionic Flight Software Release Phase 2.0 Installation*".

SECTION 2: ADMINISTRATIVE

I. Acronyms and Abbreviations

AEO	All Engines Operative
AW	AgustaWestland
BL	Buttock Line
CS	Certification Specification
CRI	Certification Review Item
Doc.	Document
EASA	European Aviation Safety Agency
EP	Extended Take-Off Power Duration
FAA	Federal Aviation Administration
GE	General Electric
HIRF	High Intensity Radiated Fields
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions
ISA	International Standard Atmosphere
JAA	Joint Aviation Authorities
LH	Left Hand
MLG	Main Landing Gear
NLG	Nose Landing Gear
No.	Number
NVG	Night Vision Goggle
OAT	Outside Air Temperature
OEI	One Engine Inoperative
RFM	Rotorcraft Flight Manual
RH	Right Hand
SL	Sea Level
STA	Station
VNE	Velocity Never Exceed
VFR	Visual Flight Rules

II. Type Certificate Holder Record.

Type Certificate Holder	Period
AgustaWestland S.p.A Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) – Italy	Until 30 July 2014
AgustaWestland S.p.A. Piazza Monte Grappa, 4 00195 Roma – Italy	Since 31 July 2014

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	07 February 2014	-	Initial Issue
Issue 02	23 January 2015	AW legal office moved to Rome, Extended range kit and new MTOW included, new manufacturer AW Ltd added	Second Issue

-END-