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
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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 12th, 2011

5. EASA Type Certification Date February 7th 2014

II. Certification Basis

1. Reference Date for determining the applicable requirements
   May 12th, 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

<table>
<thead>
<tr>
<th>RATINGS</th>
<th>MAX ITT [°C]</th>
<th>MAX NG [% - RPM]</th>
<th>MAX NF [% - RPM]</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous</td>
<td>942</td>
<td>102.7 - 42843</td>
<td>104 - 20192</td>
</tr>
<tr>
<td>Take-off 5min</td>
<td>968</td>
<td>102.7 - 42843</td>
<td></td>
</tr>
<tr>
<td>OEI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous</td>
<td>968</td>
<td>102.7 - 42843</td>
<td>104 - 20192</td>
</tr>
<tr>
<td>2.5 min</td>
<td>1078</td>
<td>105 - 41905</td>
<td></td>
</tr>
</tbody>
</table>

5.3.2 Transmission Torque Limits
### RATING

<table>
<thead>
<tr>
<th>RATING</th>
<th>MAX TORQUE [%]</th>
<th>INPUT SPEED [RPM]</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEO</td>
<td>2 x 100</td>
<td>21420</td>
</tr>
<tr>
<td></td>
<td>2 x 116 (**)</td>
<td>21420</td>
</tr>
<tr>
<td>OEI</td>
<td>1 x 135</td>
<td>21420</td>
</tr>
<tr>
<td></td>
<td>1 x 164 (**)</td>
<td>21420</td>
</tr>
</tbody>
</table>

(*) 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

<table>
<thead>
<tr>
<th>Total A/C capacity litres (Kg (*))</th>
<th>Unusable litres (Kg (*))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two main fuel tanks (LH and RH)</td>
<td>1303 (1042)</td>
</tr>
<tr>
<td>Two main fuel tanks (LH and RH)</td>
<td>1541 (1233)</td>
</tr>
<tr>
<td>plus Forward Tanks</td>
<td></td>
</tr>
<tr>
<td>Two main fuel tanks (LH and RH)</td>
<td>1825 (1460)</td>
</tr>
<tr>
<td>plus Auxiliary Central Tank</td>
<td></td>
</tr>
<tr>
<td>Two main fuel tanks (LH and RH)</td>
<td>2063 (1650)</td>
</tr>
<tr>
<td>plus Forward Tanks plus Auxiliary Central Tank</td>
<td></td>
</tr>
<tr>
<td>Extended Range (see Note 5)</td>
<td>2569 (2055)</td>
</tr>
<tr>
<td>Two main fuel tanks (LH and RH)</td>
<td></td>
</tr>
<tr>
<td>Plus under belly tanks</td>
<td></td>
</tr>
</tbody>
</table>

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

#### 7.2 Oil

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Litres (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGINE (each)</td>
<td>min 3.6 (3.59) - max 5.5 (5.49)</td>
</tr>
<tr>
<td>MAIN GEARBOX (min/max)</td>
<td>min 21.5 (21.46) - max 27 (26.95) (24.5 + 2.5 for oil cooler, oil ducts and filter)</td>
</tr>
<tr>
<td>INTERMEDIATE GEARBOX</td>
<td>1.22 (1.217)</td>
</tr>
<tr>
<td>TAIL GEARBOX</td>
<td>1.87 (1.866)</td>
</tr>
<tr>
<td>HYDRAULIC</td>
<td>3.20 (2.72)</td>
</tr>
<tr>
<td>(per each Power Control Module)</td>
<td></td>
</tr>
</tbody>
</table>
7.3 Coolant system capacity  2.9 kg

8. Air Speeds Limits

\[ \text{VNE}_{\text{Power On AEO}} \] \quad \vdots \quad 169 \text{ kts} \\
\[ \text{VNE}_{\text{Power On OEI}} \] \quad \vdots \quad 139 \text{ kts} \\
\[ \text{VNE}_{\text{Power Off}} \] \quad \vdots \quad 120 \text{ kts} \\
\[ \text{VNE}_{\text{(VFR Night / IFR Single Pilot) Power On AEO}} \] \quad \vdots \quad \text{VNE}_{\text{Power On AEO}} - 20 \text{ kts}

For reduction of the VNE with altitude, OAT and weight, see RFM.

9. Rotor Speed Limits

<table>
<thead>
<tr>
<th>Condition</th>
<th>RPM</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Continuous</td>
<td>284.75</td>
<td>100.0</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>296.14</td>
<td>104.0</td>
</tr>
</tbody>
</table>

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

\[-40^\circ \text{C} \div +55^\circ \text{C (ISA+40°C)}\]

\[-15^\circ \text{C} \div +55^\circ \text{C (ISA+40°C)} \text{ for Cat. A operations}\]

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)

“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

“AW189 Structural Repair Publication”
Doc. No. 89-A-ASRP-00-X


refer to the Section 6 of the RFM and applicable supplements

5. Illustrated Parts Catalogue

“AW189 Illustrated Tool and Equipment Publication”
Doc. No. 89-A-ITEP-00-X

“AW189 Illustrated Part Data”
Doc. No. 89-A-IPD-00-X

6. Service Letters and Service Bulletins

As published by AgustaWestland

7. Required Equipment

The installation of the followings is mandatory for IFR/VFR night Single Pilot Operations (see Supplement 3 of the RFM):

- Quick Reference Handbook (QRH)
  Doc. No. 189G0290X003, latest issue.
- Map/QRH holder P/N 8G2510F00211.
- Traffic Advisory System TCAS II (see RFM Supplement 8).

The installation of the followings is mandatory for Ditching Operations (see RFM Supplement 6):

- 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).

The installation of the followings is mandatory for Night Vision Goggles Operations (see RFM Supplement 14):

- 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”

Refer to EASA Approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment.
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
   AGUSTA WESTLAND S.p.A
   Piazza Monte Grappa, 4
   00195 Roma - Italy
   AGUSTA WESTLAND 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.

<table>
<thead>
<tr>
<th>Type Certificate Holder</th>
<th>Period</th>
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<tbody>
<tr>
<td>AgustaWestland S.p.A</td>
<td>Until 30 July 2014</td>
</tr>
<tr>
<td>Via Giovanni Agusta, 520</td>
<td></td>
</tr>
<tr>
<td>21017 Cascina Costa di Samarate (VA) − Italy</td>
<td></td>
</tr>
<tr>
<td>AgustaWestland S.p.A</td>
<td>Since 31 July 2014</td>
</tr>
<tr>
<td>Piazza Monte Grappa, 4</td>
<td></td>
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<tr>
<td>00195 Roma − Italy</td>
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III. Change Record

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