

Type Certificate Data Sheet

No. 85

This data sheet, which is part of Type Certificate No. 85, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Japan Civil Aeronautics Law and Regulations.

Type Certificate Holder: Leonardo S.p.A.
Helicopters
Piazza Monte Grappa 4
00195 Roma – Italy

Type Certificate Holder Record:

Type Certificate Holder	Period
AgustaWestland S.p.A. Piazza Monte Grappa 4, 00195 Roma – Italy	Until 31 December 2015
Finmeccanica S.p.A. Helicopter Division - Piazza Monte Grappa 4, 00195 Roma – Italy	Until 14 July 2016
Leonardo S.p.A. Helicopters - Piazza Monte Grappa 4, 00195 Roma – Italy	Since 15 July 2016

Model AW169, Transport Category A and B

I. General

1. Manufacturer: Leonardo S.p.A.
Helicopters
Piazza Monte Grappa 4
00195 Roma – Italy (See Note 2)

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2. EASA Certification Application Date: 09 February 2011
3. EASA Type Certification Date: 15 July 2015
4. JCAB Certification Application Date: 08 August 2014
5. JCAB Type Certification Date: 02 February 2016

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II. Certification Basis

1. Reference Date for determining the applicable requirements : 9 February 2011

2. Airworthiness Requirements:

- Japanese Civil Aeronautics Regulations Annex 1
- EASA CS-29 Amendment 2, dated 17 November 2008
- EASA CS-29 Amendment 3, dated 11 December 2012 for the following installations and affected areas only:
 - Kit Single Rescue Hoist P/N 6F2591F00111
- CS 29.1465 Vibration health monitoring of CS-29 Amendment 5, dated 14 June 2018
- CS-29 Amendment 6, dated 17 December 2018 for Kit Enhanced Performance (P/N 6F0000F00511, 6F0000F00611) and affected areas only

3. Special Conditions:

1. “Loss of Oil from Gearboxes Utilising a Pressurised Lubrication System” (see CRI E-12)
2. “HIRF Protection” in accordance with JAA Interim Policy INT/POL/27&29/1, issue 3 dated 01-10- 2003 (see CRI F-01)
3. “Lithium Battery Installation” (see CRI F-21)
4. “Non-Rechargeable Lithium Battery Installation”(see CRI F-23)
5. “Extended Take-Off Power Duration” (See CRI E-15)

4. Equivalent Level of Safety Findings:

1. CS 29.813(c) “Emergency Exit Access” (see CRI D-02)
2. CS 29.807(c)1 “Passenger Emergency Exits other than Side-of-Fuselage” (see CRI D-03)
3. CS 29.807(d)(2) “Ditching Emergency Exits for Passengers”(see CRI D-07)
4. CS 29.811(d) “Emergency Exit Signs” (see CRI D-04)
5. CS 29.1305, CS 29.1521, CS 29.1549, CS 29.1309 (c) “Power Index Indicator” (see CRI F-16)
6. CS 29.1305, CS 29.1521, CS 29.1549, CS 29.1309 (c) “Standby Attitude Indicator Power Supply” (see CRI F-18)
7. CS 29 Subpart B, CS 29.1305, CS 29.1309, CS 29.1549 - “Engine Training Mode” (see CRI G-01)
8. CS 29.1545(b)(4) “Airspeed indicators green arcs” (see CRI G-02)
9. CS 29.601, CS 29.603, CS 29.605, CS 29.865, CS 29.1301(d) “Hoist Installation” (see CRI D-05)
10. CS 29.1505(c)(2) “Never Exceed Speed – Power Off” (See CRI G-03)
11. CS 29.923, CS 29.927 “Rotor drive system and control mechanism tests: Endurance and additional tests by test rig” (See CRI E-17)

5. Exemptions:

N/A

6. JCAB Additional Special Requirements:

1. Requirements for markings and placards written in Japanese language as shown in JCAB Circular No.1-008
2. Requirements for content of Rotorcraft Flight Manual as shown in JCAB Circular No.1-001
3. Requirements for White strobe light system as shown in JCAB Circular No.1-026 (If installed)

7. Environmental Requirements:

7.1 Noise:

Japanese Civil Aeronautics Regulations Annex 2 Chapter 5 dated 1 January 2021 (equivalent to ICAO Annex 16, Volume I, Part II, Chapter 8, amendment 13) for Noise Requirements

7.2 Emissions:

Japanese Civil Aeronautics Regulations Annex 3 Chapter 1 dated 1 January 2021 (equivalent to ICAO Annex 16, Volume II, Part II, Chapter 2, amendment 10) for Fuel Venting Requirements.

III. Technical Characteristics and Operational Limitations

1. Type Design Definition:

AW Doc. No. 169F0272N002

2. Description:

Large twin-engine helicopter, conventional configuration, 5-blade fully articulated main rotor fitted with inter-blade dampers, 3-blade fully articulated tail rotor, retractable tricycle landing gear

3. Equipment:

As per compliance with certification basis and included in Type Design Definition Document

4. Dimensions:

4.1 Fuselage:

Length	12,190 mm
Width :	
hull	2,150 mm
horizontal stabilizer	3,210 mm
horizontal stabilizer 'moustache'	3,280 mm
Height	3,880 mm

4.2 Main Rotor:

5 blades	Diameter	12,120 mm
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4.3 Tail Rotor:

3 blades	Diameter	2,400 mm
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5. Engines:

5.1 Model:

Pratt & Whitney Canada
2 x Model PW210A
or,
2 x Model PW210A1 (helicopters with Kit Enhanced Performance installed)

5.2 JCAB Type Approval: (EASA Type Certificate:

No.737-3 dated 20 December, 2022
EASA IM.E.126)

5.3 Limitations:

In accordance with PW210A Pratt & Whitney Canada Installation Manual (Ref. to 30L2374)

5.3.1 Installed Engine Limits: PW210A

RATING		MAX TORQUE [% (Nm)]	MAX ITT [°C]	MAX NG [% (rpm)]	MAX NF [%(rpm)]
AEO	Continuous	118.6 (395.9)	868	96.5 (49,200)	107 (28,120)
	Take-off 5 min	125.9 (420.3)	930	98.2 (50,100)	
	Take-off 30 min(*)				
OEI	Continuous	148.3 (494.9)	941	98.9 (50,430)	107 (28,120)
	2.5 min	174.7 (583)	1020	100.7 (51,360)	

(*) if Core Avionic SW phase 4.0 P/N 6F4600A00114, or later, is installed.

PW210A1 (helicopters with Kit Enhanced Performance installed)

RATING		MAX TORQUE [% (Nm)]	MAX ITT [°C]	MAX NG [%(rpm)]	MAX NF [%(rpm)]
AEO	Continuous	118.6 (395.9)	868	96.5 (49,200)	107 (28,120)
	Take-off 5 min	125.9 (420.3)	937	98.2 (50,100)	
	Take-off 30 min				
OEI	Continuous	148.3 (494.9)	937	98.8 (50,400)	107 (28,120)
	2.5 min	185 (618.3)	1020	100.7 (51,360)	

5.3.2 Transmission Torque Limits: PW210A

RATING		MAX TORQUE [% (Nm)]	INPUT SPEED [rpm]	INPUT POWER [hp]
AEO	Maximum Continuous	2x100 (334)	14,400	1,350 (675x2)
	5 min	2x111 (371)	14,400	1,500 (750x2)
	30 min(*)			
OEI	Maximum Continuous	140 (470)	14,400	950
	2.5 min	174 (583)	14,400	1,180

(*) if Core Avionic SW phase 4.0 P/N 6F4600A00114, or later, is installed.

PW210A1 (helicopters with Kit Enhanced Performance installed)

RATING		MAX TORQUE [% (Nm)]	INPUT SPEED [rpm]	INPUT POWER [hp]
AEO	Maximum Continuous	2x100 (334)	14,400	1,350 (675x2)
	5 min	2x122 (407)		1,650 (825x2)
	30 min			1,650 (825x2)
OEI	Maximum Continuous	148 (493)	14,400	1,000
	2.5 min	185 (618)		1,250

6. Fluids (Fuel/ Oil/ Additives):

6.1 Fuel:

JET A, JET A1, JP8, JP8+100, No.3 Jet Fuel (for code number specification and more details refer to the JCAB approved Rotorcraft Flight Manual)

6.2 Oil: Transmission

AEROSHELL TURBO OIL 555 (DoD-L-85734). No different specification or brand is allowed

Engine

Refer to the JCAB approved Rotorcraft Flight Manual

Hydraulics

MIL-PRF-83282, MIL-PRF-87257 (as alternative)

6.3 Fuel Additives:

Refer to the JCAB approved Rotorcraft Flight Manual

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)	1,130 (904)	20 (16)

(*) Above fuel mass has been defined assuming a standard fuel density of 0.8 kg/l.

7.2 Oil:

	Quantity litres (kg) (*)
ENGINE (each)	min 5.25 (4.948) - max 5.78 (5.448)
MAIN GEARBOX (min/max)	min 17 (16.968) - max 19 (18.964) (16.8 + 2.2 for oil cooler, oil ducts and filter)
INTERMEDIATE GEARBOX	0.77(0.768)
TAIL GEARBOX	1.10 (1.098)
HYDRAULIC (per each Power Control Module)	1.3 (1.1)

(*) litres (kg at 80°C)

7.3 Coolant system capacity: 2.1 kg

8. Air Speed Limits:

VNE_{Power On AEO}165 KIAS
 VNE_{Power On AEO*}160 KIAS
 VNE_{Power On OEI}135 KIAS
 VNE_{Power Off}125 KIAS
 For reduction of the VNE with Density Altitude (HP/OAT), see RFM.
 (*) if Core Avionics SW Phase 6.0, or later is installed

9. Rotor Speed Limits:

Power On AEO (*)		
Condition	(rpm)	(%)
Minimum Continuous	317.56	96.0
Maximum Continuous	354.72	103.0
Power On OEI		
Condition	(rpm)	(%)
Minimum Cautionary	304.05	90.0
Minimum Continuous	341.21	101.0
Maximum Continuous	354.72	105.0
Power Off		
Condition	(rpm)	(%)
Minimum Continuous	304.05	90.0
Maximum Continuous	371.61	110.0

(*) Maximum and minimum continuous values of the flight envelope. AVSR provides a governing of the rotor speed at different values depending on airspeed (TAS/IAS**) and density altitude. As the NR datum is variable, NR green band is variable as well ($\pm 2\%$ across the datum value).

(**) IAS if Core Avionics SW Phase 6.0, or later is installed.

See RFM for additional rotor speed limitations

10. Maximum Operating Altitude and Temperature:

10.1 Altitude:

Maximum flight altitude
 15 000 ft* for operation at gross mass up to 4 600 kg,
 and,
 10 000 ft* for operation at gross mass above 4 600 kg
 without Kit Enhanced Performance installed, or,
 15 000 ft* for operation at gross mass above 4 600 kg
 with Kit Enhanced Performance is installed
 Maximum Take-off and Landing altitude
 15 000 ft* for operation at gross mass up to 4 600 kg,
 and,
 10 000 ft* for operation at gross mass above 4 600 kg
 without Kit Enhanced Performance installed, or,
 15 000 ft* for operation at gross mass above 4 600 kg
 with Kit Enhanced Performance is installed
 * altitude in PA/DA (whichever occurs first)

10.2 Temperature:

-40°C ~ +50°C (ISA + 35°C)
 -40°C ~ +50°C (ISA + 35°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
12. Maximum Weight:	
12.1 Take-off and Landing	4,600 kg, or 4,800 kg if P/N 6F0000F00211 is installed
12.2 Taxi and Towing	4,650 kg, or 4,850 kg if P/N 6F0000F00211 is installed
13. Centre of Gravity Range:	Refer to the JCAB approved RFM
14. Datum:	Longitudinal Datum (STA 0) is located at 3,528 mm forward to the front jack point Lateral Datum (BL 0) is located at +/- 225 mm inboard of LH/RH front jack points
15. Levelling Means:	Plumb line from ceiling reference point to index plate on floor of baggage compartment.
16. Minimum Flight Crew:	One (1) pilot for VFR day and night and IFR. For NVG operations, two (2) pilots or one (1) pilot and one (1) crew member required. Both pilot and crew member must be equipped with NVGs (see Note 3).
17. Maximum Passenger Seating Capacity:	10 passengers in the passenger cabin + 1 passenger in the cockpit in case of one pilot flight crew. Refer to approved RFM for passenger cabin configurations.
18. Passenger Emergency Exit:	2 on each side of the passenger cabin 1 on each side of the passenger cabin, if the kit Sliding Aft Passenger Windows P/N 6F5630F00411 is installed.
19. Maximum Baggage / Cargo Loads:	250 kg located in the Baggage/Cargo compartment
20. Rotor Blade control movement:	For rigging info ref to RFM
21. Auxiliary Power Unit (APU):	N/A
22. Life-limited parts:	refer to the Airworthiness Limitation Section (ALS) of the Maintenance Manual
23. Wheels and Tyres:	MLG wheel assembly with 18 x 5.5 tubeless tyres NLG wheel assembly with 5 x 5.5 tubeless tyres

IV. Operating and Service Instructions

1. Flight Manual:

Rotorcraft Flight Manual, Doc. No. 169F0290X001J, initial issue dated 02 February 2016, JCAB approved on 02 February 2016 or later approved revisions.

Doc. No. AW169 RFM-Sup.01-00 covering Doc. No. 169F0290X012, Original issue dated 20 December 2022, JCAB approved 20 December 2022, or later approved revisions, only for helicopters with Kit Enhanced Performance installed.

2. Maintenance Manual:	“AW169 Maintenance Planning Information” Doc. No. 69-A-AMPI-00-P, EASA accepted 15 July 2015, or later revisions, including: - Chapter 4 ALS, initial issue dated 15-07-2015, EASA approved on 15 July 2015 or later approved revisions; - Chapter 5 with Scheduled Maintenance Requirements “Maintenance Review Board Report for AW169 Helicopter” Doc. No. 169F0000M005 “AW169 Maintenance Publication” Doc. No. 69-A-AMP-00-X “AW169 Material Data Information” Doc. No. 69-A-AMDI-00-X “AW169 Corrosion Control Publication” Doc. No. 69-A-ACCP-00-X “AW169 Fault Isolation Publication” Doc. No. 69-A-AFIP-00-X “AW169 Wiring Data Publication” Doc. No. 69-A-AWDP-00-X
3. Structural Repair Manual:	“AW169 Structural Repair Publication” Doc. No. 69-A-ASRP-00-X “AW169 Component Repair and Overhaul Publication” Doc. No. 69-A-CR&OP-00-X
4. Weight and Balance Manual:	refer to the Section 6 of the RFM and applicable supplements
5. Illustrated Parts Catalogue:	“AW169 Illustrated Tool and Equipment Publication” Doc. No. 69-A-ITEP-00-X “AW169 Illustrated Part Data” Doc. No. 69-A-IPD-00-X
6. Service Letters and Service Bulletins:	As published by AgustaWestland S.p.A. or Finmeccanica S.p.A. or Leonardo S.p.A.
7. Required Equipment:	As per compliance with certification basis and included in Type Design Definition standard. Refer to approved Rotorcraft Flight Manual and MMEL Refer to the JCAB Approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment.

V. Notes

1. Serial Numbers 69006 and subsequent
2. Manufacturer AgustaWestland S.p.A. in Italy (*)

(*) Effective on 01 January 2016, AgustaWestland S.p.A. ownership was transferred to Finmeccanica S.p.A.; Effective on 28 July 2016, Finmeccanica S.p.A. name was changed into Leonardo S.p.A..
3. NVG Operations

Night Vision Goggle Operations are permitted according to RFM 169F0290X012 Supplement No. 16. The aircraft configuration involving internal/external emitting/reflecting equipment approved for use with NVG is described in the Report No. 169F3360A001 'AW169 NVG Compatibility Reference Handbook'. Subsequent modifications and deviations to the NVG helicopter configuration shall be managed in accordance with document 169F3360E001 'AW169 Helicopter NVG Policy'.
4. Installation of the TSS-4100 system P/N 6F0630A03113, has been demonstrated compliant with Certification Specifications for Airborne Communications Navigation and Surveillance, CS-ACNS initial issue, dated 17 December 2013.
- J1. This Type Certificate Data Sheet (TCDS) is based on TCDS No. EASA R.509 Issue 14 dated 22 December 2022.
- J2. Placards and markings for the emergency evacuation, safety equipment and necessary matters to be notified to passengers in order to assure safe operation of rotorcraft, must be indicated in Japanese in accordance with JCAB Circular No.1-008. The rotorcraft must be operated according to the required Japanese placards and markings which are defined in drawing as documented below.
DWG No.6F1100P00211
- J3. The rotorcraft must be operated according to the appropriate JCAB Approved Rotorcraft Flight Manual and Rotorcraft Flight Manual Supplements.
- J4. Import Eligibility

To be considered eligible for operation in the Japan, each rotorcraft manufactured under this Type Certificate must be accompanied by a Certificate of Airworthiness for Export or certifying statement endorsed by the exporting foreign civil airworthiness authority which states the following (in the English language)

"This rotorcraft has been examined, tested and found to conform to the type design approved under JCAB Type Certificate No.85-1 and to be in a condition for safe operation."
- J5. Production Basis

ENAC Production Certificate of AW169 in Italy Number: IT.21G.0007 (Effective Date: 1 January 2016)

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