TYPE CERTIFICATE DATA SHEET

No. EASA.R.006

for

AB139 / AW139

Type Certificate Holder

Leonardo S.p.A.

Helicopters
Piazza Monte Grappa, 4
00195 Roma
Italy

For Models: AB139
AW139

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SECTION 1: AB139 / AW139

AB139 and AW139 are two names for the same product. They identify two batches of aircraft manufactured in conformity with a unique Type Certificate Data Sheet. Refer to Note 2 for applicable Serial Numbers.
Where not specifically declared, the content of this document is applicable to both AB139 and AW139.

I. General

1.	Type/ Model/ Variant	
	1.1 Type	AB139 / AW139
	1.2 Models	AB139 / AW139 (see Note 2)
2.	Airworthiness Category	Large Rotorcraft – Cat A / B See Section IV, item 4 for the required equipment
3.	Manufacturer	See Note 2
4.	Type Certification Application Date to ENAC	12 March 1999
5.	State of Design Authority	EASA (pre EASA: ENAC, Italy)
6.	Type Certificate Date by ENAC	18 June 2003
7.	Type Certificate n° by ENAC	A415
8.	Type Certificate Data Sheet n°	SO/A415
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	For Airworthiness and Environmental Protection: 12 March 1999 for OSD elements: 17 February 2014
2.	Airworthiness Requirements	- JAR 29 Amdt 3, dated 1 April 2002 - CS-29 Amdt. 4, dated 30 November 2016, for installation and affected areas of kit Dual Cargo Hook P/N 4G2592F0011 only (see Note 13) - CS 29.1465 Amdt. 3 Vibration health monitoring
3.	Special Conditions	- Special Requirement for HIRF in accordance with JAA interim policy and guidance material document INT/POL/27&29/1 “Protection from the effects of HIRF” - For EPIC phase 5 approval (including SAR modes) Special Condition “Search and Rescue System Approval” applies
4.	Deviations	none
5.	Equivalent Safety Findings	- JAR 29.1181 (a)(6) Designated fire zone - JAR 29.1309 and 1357 (e) EPIC system - JAR 29.1305 - For NDC-139G5600-001: JAR 29.811 (d) Emergency Exits Signs
6.	Environmental Protection Requirements	
	6.1 Noise Requirements	See TCDSN EASA.R.006
	6.2 Emission Requirements	ICAO Annex 16, Ed. 1993, Vol. II, Part II, Chapter 2 (fuel venting), see Note 4.
7.	Operational Suitability Data (OSD)	(For OSD elements see SECTION 2 below)

7.1	Master Minimum Equipment List (MMEL)	JAR-MMEL/MEL Section 1, Amdt. 1, dated 1 August 2005
7.2	Flight Crew Data (FCD)	CS-FCD, Initial Issue, dated 31 January 2014
7.3	Simulation Data (SIMD)	*reserved*
7.4	Maintenance Certifying Staff Data (MCSD)	*reserved*

III. Technical Characteristics and Operational Limitations

1. Type Design Definition
   - Report n° 139G0000P005/02 "AW139 – Type Design Definition (4 displays configuration)
   - Report n° 139G0000P005/03 "AW139 – Type Design Definition (Long Nose configuration)

2. Description

Main rotor:	five blades, fully articulated type
Tail rotor:	four blades
Fuselage:	conventional configuration
Landing gear:	tricycle, retractable
Powerplant:	two free turbine turboshaft engines

3. Equipment — Refer to approved RFM for equipment list

4. Dimensions

4.1 Fuselage	Length:	13.53 m	(13.73 m for Long Nose)
	Width:	2.26 m	
	Height:	3.72 m	
4.2 Main Rotor	Diameter:	13.80 m	
4.3 Tail Rotor	Diameter:	2.70 m	

5. Engine

5.1 Model

Pratt&Whitney Canada Corp.
2 x Model PW PT6C-67C
Free turbine turboshaft engines provided with EEC with the implementation of P&WC Service Bulletins 41011, 41012R and 41013, or

2 x Model PW PT6C-67C1
Free turbine turboshaft engines provided with EEC

5.2 Type Certificate

TCCA TC/TCDS n°:	E32
EASA TC/TCDS n°:	EASA.IM.E.022
FAA TC/TCDS n°:	E00068EN

5.3 Limitations

5.3.1 Installed Engine Limitations

	Max. TQ [Nm (lb ft)]	Max. ITT [°C]	Max. gas gen. speed [rpm]	Max. output shaft speed [rpm]
OEI 2 ½ min	542 (400)	835	40 500	21 000 (21 420(1))
OEI continuous	475 (350)	775	39 100	21 000 (21 420(1))
TOP (5 min)	373 (275)	775	39 100	21 000 (21 420(1))
MCP	339 (250)	735	38 200	21 000 (21 420(1))

(1) For Category A take-off and landings below 90 KIAS and for external hoist and cargo hook operations

5.3.2 Transmission Torque Limits

Transmission	PWR @ 100% NR [kW (hp)]	TQ [%]
MCP Max Continuous OEI	1 044 (1 400)	140
OEI 2 ½ min	1 193 (1 600)	160
MCP Max Continuous AEO	746 (1 000) x 2	100
TOP Take-Off AEO	820 (1 100) x 2	110

6. Fluids (Fuel/Oil) — For detailed information, see Section 1 of the Rotorcraft Flight Manual

6.1 Fuel — For all temperatures:
Jet A-1, Jet A, JP5, JP8, JP8+100,
GOST 10227 RT, GOST 10227 TS-1

6.2 Oil — For all temperatures:
MIL-PRF-23699F and DOD-PRF-85734 Transmission Oil.
For engine oils, see Engine Maintenance Manual

6.3 Hydraulic Oil — For all temperatures:
MIL-PRF-83282
Alternative for low temperatures MIL-PRF-5606

7. Fluid capacities

7.1 Fuel — Total: 1 588 litres (see Note 11)
Unusable: 20 litres

7.2 Oil — Refer to RFM

7.3 Coolant System Capacity — Refer to RFM

8. Air Speed Limitations — V_{ne}: 167 KIAS
$V_{ne\ OEI/PWR\ OFF}$: 147 KIAS
See Section 1 of the RFM for variation with altitude and temperature.

9. Rotor Speed Limitations — AEO and OEI Continuous Operation Range: 98-101 %
Power OFF: 95-110 %
For Category A take-off and landings below 90 KIAS and external hoist and cargo hook operations:
AEO and OEI Cautionary Operation Range: 101-103 %
See Section 1 of the RFM for additional limitations.

10. Maximum Operating Altitude and Temperature

10.1 Altitude — 20 000 ft (6 096 m) PA or DA whichever comes first (see Notes 6, 8 and 9)

10.2 Temperature — See Rotorcraft Flight Manual (see Notes 6, 8 and 9).

11. Operating Limitations — VFR/IFR operations in non-icing conditions.
For IFR operations in known icing conditions and limited icing conditions see Notes 8 and 9.
See also RFM.

12. Maximum Mass

12.1 Maximum Mass — 6 400 kg (see Note 6)

12.2 Maximum Taxi and Ramp Mass — 6 450 kg (see Note 6)

12.3 Maximum Take-Off Mass — 6 400 kg (see Note 6)

12.4 Maximum Landing Mass — 6 400 kg (see Note 6)

13. Centre of Gravity Range — Refer to RFM

14.	Datum	See Maintenance Manual
15.	Levelling Means	See Maintenance Manual
16.	Minimum Flight Crew	One (1) for VFR day and two (2) for VFR night and IFR. Two (2) pilots for IFR operations in known icing conditions and limited icing conditions. See Section IV, item 4 for the required equipment for Single Pilot operations. 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 7)
17.	Maximum Passenger Seating Capacity	fifteen (15)
18.	Passenger Emergency Exit	6 (three on each side of the passengers cabin) 4 (two on each side of the passengers cabin), if the kit Cabin Bubble Windows P/N 4G5620F00111 is installed. For detailed information refer to RFM
19.	Maximum Baggage/ Cargo Loads	200 kg Increased Baggage Compartment Load: see Note 5
20.	Rotor Blade Control Movement	Main Rotor (collective) +15°24' ÷ 0°36' Main Rotor (longitudinal cyclic) back 10° ÷ 16° forward Main Rotor (lateral cyclic) left 9° ÷ right 9° Tail Rotor pitch range -10° ÷ +24° -10° ÷ +25°30' (see Note 6)
21.	Auxiliary Power Unit (APU)	n/a
22.	Life-limited Parts	Refer to EASA-approved Chapter 4 of the Maintenance Manual
23.	Wheels and Tyres	Nose Landing Gear: 5.00-5 Type: 10PR Main Landing Gear: 18 x 5.5 Type: 10PR

IV. Operating and Service Instructions

1.	Flight Manual	Report n. 139G0290X002 - Rotorcraft Flight Manual (4 display)
2.	Maintenance Manual	Maintenance Planning Information 39-A-AMPI-00-P Maintenance Publication 39-A-AMP-00-P
3.	Service Letters and Service Bulletins	As published by Agusta S.p.A., AgustaWestland S.p.A., Finmeccanica S.p.A. or Leonardo S.p.A.
4.	Required Equipment	The installation of the following is mandatory for Category A operations: - Service Bulletin P&WC S.B. No. 41020 - Honeywell Primus EPIC s/w P/N MM7030191-004 or later The installation of the following is mandatory for Single Pilot VFR night operations: - Traffic Advisory System (TCAS) RFM 139G0290X002, Supplement 25 - Quick Reference Handbook (QRH) -Pub Code 502500033, latest issue - Map/QRH holder P/N 4G2510F00111, P/N 4G2510F00113, or equivalent.

The installation of the following is mandatory for Single Pilot IFR operations:
- Flight Director RFM 139G0290X002, Sup. 34 or 40 or 67 or 69 or 70
- Quick Reference Handbook (QRH) -Pub Code 502500033, latest issue
- Map/QRH holder P/N 4G2510F00111, P/N 4G2510F00113 or equivalent.

The installation of the following is mandatory for Night Vision Goggle operations:
- NVIS compatible lighting systems P/N 4G3360F00111
- EPIC software 4.8 or subsequent

Refer to EASA Approved Rotorcraft Flight Manual for other approved mandatory and optional equipment.

The installation of the following is mandatory for operations in Known Icing condition:
- Kit Full Ice Protection System P/N 4G3000F00211

The installation of the following is mandatory for operations in Limited Icing conditions:
- Kit Limited Ice Protection System P/N 4G3000F00111

Refer to EASA Approved Rotorcraft Flight Manual for other approved mandatory and optional equipment.

V. Notes

1. Cabin Interior and Seating Configurations must be approved when not yet included in the type design (see list in the Rep. 139G9500U001).
2. Manufacturer's eligible serial numbers:
   - S/N 31001 to S/N 31054: AB139 designation, manufactured by Agusta S.p.A. in Italy (*), (**)
   - S/N 31055 to S/N 31157: AW139 designation, manufactured by Agusta S.p.A.in Italy (*), (**)
   - S/N 31201 to S/N 32999: AW139 Long Nose Configuration, manufactured by Agusta S.p.A.in Italy under EASA Production Certificate IT.21G.0007 (**)
   - S/N 41001 to S/N 41023: AW139 designation, manufactured by Agusta S.p.A. in USA (*), (**)
   - S/N 41201 to 41999: AW139 Long Nose Configuration, manufactured by Agusta Aerospace Corporation (AAC) in USA under FAA Production Certificate PC 120NE (***)
   - S/N 60001 and above: AW139 manufactured by JSC HeliVert - Russia, are not eligible for registration in EASA Member States.

   (*) Already manufactured and not anymore in production.

   (**) Effective on 1 June 2011, the Agusta S.p.A. name was changed into AgustaWestland S.p.A.; Effective on 1 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.

   (***) Effective on 24 August 2006, the Agusta Aerospace Corporation (AAC) name was changed to AgustaWestland Philadelphia Corporation (AWPC).
3. Material WNS-2U as an alternative to 15-5PH is acceptable only on the following landing gear S/Ns and for max 6 400 kg Take-Off and Landing mass and 6 450 kg Ramp Mass:
   - Nose Landing gear P/N 3G3220V00131/33 from S/N 101 to S/N 130
   - Left MLG P/N 3G3210V00131/33 from S/N 101 to S/N 120
   - Right MLG P/N 3G3210V00231/33 from S/N 101 to S/N 120
4. The fuel vented from the injector line at the engine shutdown, is recollected into the main fuel tank, according to the Report n. 139G0000P005 “AW139 – Type Design Configuration”.

V. Notes

5. The installation of the restraint net anchoring system P/N 3G2550F00113 and the restraint net P/N 3G2550F00311 permits the maximum mass to be carried in the baggage compartment to be increased to 300 kg.
   For detailed information, refer to Supplement N° 31 of the Rotorcraft Flight Manual.
6. Operation of the aircraft with MTOM up to 6 800 kg is permitted according to RFM 139G0290X002 Supplement N° 50 if kit P/N 4G0000F0011 is installed. Operation with MTOM up to 7 000 kg is permitted according to RFM 139G0290X002 Supplement No. 90 if kit P/N 4G0000F00311 is installed.
7. Night Vision Goggle Operations are permitted according to RFM 139G0290X002 Supplement N° 60. The aircraft configuration involving internal/external emitting/reflecting equipment approved for use with NVG is described in the Report n. 139G3360A001 “AW139 NVG Compatibility Reference Handbook”. Subsequent modifications and deviations to the NVG helicopter configuration shall be managed in accordance with document 139G3360E001 “AW139 HELICOPTER NVG POLICY”.
8. Operation in Known Ice Condition is permitted according to RFM 139G0290X002 Supplement 71 if kit Ice Protection System P/N 4G3000F00211 is installed. The aircraft configuration approved for use in icing condition is described in the Report 139G3000A001 “AW139 Icing Compatibility Reference Handbook”.
9. Operation in Limited Icing Condition is permitted according to RFM 139G0290X002 Supplement 76 if kit Limited Icing Protection System P/N 4G3000F00111 is installed. The aircraft configuration approved for use in limited icing condition is described in the Report 139G3000A001 “AW139 Icing Compatibility Reference Handbook”.
10. EMI incompatibility for all optional equipment included in the RFM 139G0290X002 is detailed in the document 139G9850A001 “AW139 EMI Compatibility Reference Handbook”.
11. For the Auxiliary Fuel Tank (RFM Supplement 15) and for the Longitudinal Fuel Tank (RFM Supplement 65) the total fuel is 2 088 litres. The unusable does not change with respect to the basic configuration.
12. PEDs sensitive equipment, which are under the responsibility of the TC Holder and are declared as NON-PED tolerant, or have PED tolerance limitations are reported in the document 139G9850A002 “AW139 NON-PED TOLERANT REFERENCE HANDBOOK”.
13. Kit Dual Cargo Hook P/N 4G2592F00111
    For this design change the CS-29 Amdt.4, dated 30 November 2016, is applicable for the following requirements:
    - CS 29.143 Controllability and Manoeuvrability,
    - CS 29.571 Fatigue Tolerance Evaluation of Metallic Structure,
    - CS 29.610(d)(4) Lightning and Static Electricity Protection,
    - CS 29.865 External Loads,
    - CS 29.1316 Electrical and electronic System lightning protection,
    - CS 29.1317 High-Intensity Radiated Fields (HIRF) Protection,
    - Appendix A A29.4 Airworthiness Limitations Section,
    - Appendix E HIRF Environments and Equipment HIRF Test Levels.

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SECTION 2: OPERATIONAL SUITABILITY DATA (OSD)

The OSD elements listed below are approved by the European Aviation Safety Agency as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

OSD Elements

1. MMEL

   139G0270Q008 Rev. G, dated 30-Nov-2012, or later EASA approved revisions.

2. Flight Crew Data

   139G0000N027 Rev. A, dated 14 Dec-2015, or later EASA approved revisions

3. SIM Data

   reserved

4. Maintenance Certifying Staff Data

   reserved

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

AEO	All Engines Operative	NLG	Nose Landing Gear
AW	AgustaWestland S.p.A. (former company name and ownership)	No.	Number
		NVG	Night Vision Goggle
CRI	Certification Review Item	OEI	One Engine Inoperative
CS	Certification Specification	OSD	Operational Suitability Data
DA	Density Altitude	PA	Pressure Altitude
ESF	Equivalent Safety Finding	PWR	Power
FAA	Federal Aviation Administration	RFM	Rotorcraft Flight Manual
HIRF	High Intensity Radiated Fields	RH	Right Hand
ICAO	International Civil Aviation Organisation	S/N	Serial Number
		SIM	Simulator
IFR	Instrument Flight Rules	TCCA	Transport Canada
JAA	Joint Aviation Authorities	TCH	Type Certificate Holder
KIAS	Knots Indicated Air Speed	TOP	Take-of Power
LH	Left Hand	TQ	Torque
MCP	Maximum Continuous Power	VFR	Visual Flight Rules
MLG	Main Landing Gear	V_{NE}	Never Exceed Speed
MMEL	Master Minimum Equipment List	$V_{PWR\ OFF}$	Power-off Speed (Autorotation)

II. Type Certificate Holder Record

II.1 Type Certificate Holder	**Period**
Agusta S.p.A. Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) – Italy	18 June 2003 - 31 May 2011
AgustaWestland S.p.A. Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) – Italy	1 June 2011 - 30 July 2014
AgustaWestland S.p.A. Piazza Monte Grappa, 4, 00195 Roma – Italy	1 August 2014 - 31 December 2015
Finmeccanica S.p.A. Helicopter Division - Piazza Monte Grappa, 4, 00195 Roma – Italy	1 January 2016 - 27 July 2016
Leonardo S.p.A. Helicopters - Piazza Monte Grappa, 4, 00195 Roma – Italy	Since 28 July 2016

III. Change Record

Issue	**Date**	**Changes**	**TC issue**
Issue 1	14 Feb 2005	Initial TCDS issued by EASA	EASA.R.006 first issue dated 14 February 2005
Issue 2	- - -	Change Record reported in the List of effective pages in the first page of the earlier EASA TCDS format. Please refer to individual TCDS issues in which changes are solely marked by a vertical bar.	- - -
Issue 3	23 Jun 2005	as above	- - -
Issue 4	- - -	as above	- - -
Issue 5	9 Dec 2005	as above	- - -
Issue 6	19 Jun 2006	as above	- - -

Issue	Date	Changes	TC issue
Issue 7	22 Aug 2006	as above	Re-issued 22 August 2006
Issue 8	14 Mar 2007	as above	- - -
Issue 9	9 Jul 2007	as above	- - -
Issue 10	31 Oct 2007	as above	- - -
Issue 11	20 Aug 2008	as above	- - -
Issue 12	9 Mar 2009	as above	- - -
Issue 13	3 Sep 2009	as above	- - -
Issue 14	4 May 2010	as above	- - -
Issue 15	23 Jan 2012	TCH ownership transferred to AgustaWestland S.p.A., and, AgustaWestland Philadelphia Corporation (AWPC)	Re-issued 23 January 2012
Issue 16	15 Jul 2015	Changes not marked	- - -
Issue 17	17 Dec 2015	TCH company address change; introduction of Section 2 and Section 3 for OSD elements; updated TCDS format.	- - -
Issue 18	13 Jan 2016	TCH ownership transfer to Finmeccanica S.p.A.	Re-issued 13 January 2016
Issue 19	4 Aug 2016	TCH company name change to Leonardo S.p.A.	Re-issued 4 August 2016
Issue 20	9 Apr 2018	Production Organisation certificate number added to V.2., and other minor editorial changes.	- - -
Issue 21	5 Nov 2018	- II.2. amended by: Kit Dual Cargo Hook P/N 4G2592F00111 (ref. CRI A-01 HEC) - Notes V.12 and V.13 added; - Minor editorial changes.	- - -
Issue 22	8 Jan 2019	- II.2., 3., 6.: references to CRI removed; - II.7.: Compliance with CS 29.1465 added - II.8.: Text condensed, direct reference to TCDSN - Minor editorial changes.	- - -
Issue 23	18 Sep 2020	- SECTION 1, V.2: - S/N range for 'Long Nose Configuration' extended; - S/N 60001 and up, non-eligibility for registration in EU Member States clarified. - SECTION 2, I.3: FCD Certification Basis updated.	- - -
Issue 24	3 Aug 2021	- SECTION 1, I.3: Type Certificate Holder addedSECTION 2: - II.2-II.7: adapted to TCDS format policy; - II.5: ESF to JAR 29.811 (a) added; - OSD I.1-I.5: moved to SECTION 1, II.7.; - III.5.1: engine model PW PT6C-67C1 added	- - -
Issue 25	8 Sep 2021	- Section 1, I.3: removed, refer to page 1 (TCDS policy) - Section 1, II.5: typo '(a)' corrected to read '(d)'	- - -

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