Civil Aviation Authority
United Kingdom

TYPE-CERTIFICATE DATA SHEET

UK.TC.R.00103

for

A109/A119

Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Rome

Italy

Model(s):	A109, A109A, A109AII, A109C, A109E, A109K2, A109LUH, A109N, A109S, AW109SP, A119, AW119MKII
Issue:	1
Date of issue:	22 April 2024

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Note: In this TCDS, references to EU regulations are to those regulations as retained and amended in UK domestic law under the European Union (Withdrawal) Act 2018 and are referenced as “UK Regulation (EU) year/number or UK Regulation (EU) No. number/year”

Section 1: A109

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

A109

1.3 Variant

-

2. Airworthiness Category Small Rotorcraft

Small Rotorcraft

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See Section 13ii.

5. Type Certification Application Date to RAI

18 February 1971

6. State of Design Authority

EASA (pre-EASA: RAI/ENAC, Italy)

7. Type Certification Date by RAI

28 May 1975

8. Type Certificate n° by RAI

SO/A 156

9. Type Certificate Data Sheet n° by RAI

SO/A 156

10. 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.

18 February 1971

2. Airworthiness Requirements

FAR 27 / 29 Amdt. as defined here below. FAR 27 with Amdt. from 1 to 8 included, FAR 29 Paragraph 29.903 (b) “Category A, engine isolation”.

3. Special Conditions

Special Conditions N°27-54-EU-17 dated 26 June 1973 forwarded with sheet N° 109.489/T, dated 3 July 1973

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

Shut-off valve, instead of FAR 27.1189

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

Noise Requirements

see TCDSN UK.TC.R.00103

8.1 Emissions Requirements

n/a

9. Operational Suitability Data (OSD)

Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Refer to Drawing 109-9000-01-5 (See Note 3 in this Section).

2. Description

Light twin-engine aircraft, four (4) metallic blades, articulated main rotor, twin (2) blades teetering tail rotor, tricycle retractable landing gear, one (1) pilot and seven (7) passengers' capacity. (See Note 1 in this Section)

3. Equipment

Basic equipment required by the airworthiness rules (see Certification Basis) shall be installed on the helicopter for the Airworthiness Certificate release.

Besides are required the following equipment:

OAT Indicator P/N MS28028-1.

Approved mandatory and optional equipment listed in report 109-07-01 "Elenco degli equipaggiamenti".

Refer also to the Equipment list in RFM.

4. Dimensions

4.1 Fuselage Length: 10.71 m

Width: 2.88 m

Height: 3.30 m

4.2 Main Rotor Diameter: 11.00 m

4.3 Tail Rotor Diameter: 2.03 m

5. Engine

5.1 Model

Rolls–Royce Corporation (former: Allison) 2 x Model 250-C20

5.2 Type Certificate

State of Design Engine TC/TCDS n°: FAA n°E4CE

EASA TC/TCDS n°: EASA.IM.E.052

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

Installed Engine Limits		
AEO	Take-Off (5 minutes)	346 shp, 113%
	Maximum Continuous	346 shp, 113%
OEI	Take-Off (5 minutes)	400 shp, 131%
	Maximum Continuous	385 shp, 126%
See approved Rotorcraft Flight Manual for TOT, N1 and transient		

Transmission Torque Limits
See approved Rotorcraft Flight Manual for information

5.3.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6. Fluids

6.1 Fuel

For all temperatures:

MIL-T-5624 type JP4, ASTM D-1655 Jet B For temperatures higher than -18°C (0°F):

MIL-T-5624 Type JP5, ASTM D-1655 Jet A, ASTM D-1655 Jet A1

For detailed information refer to approved RFM Section 1

6.2 Oil

Engines: MIL-L-7808G

Transmission: MIL-L-7808G

For detailed information refer to approved RFM Section 1

7.	**Fluid capacities**	
7.1	Fuel	Total usable: 550.0 litres (Two tanks capacity of 275 litres each) Refer to approved RFM for unusable fuel
7.2	Oil	Engines: 7.7 litres each Transmission: 12.0 litres Refer to approved RFM for non-drainable lubricant
8.	**Air Speed Limitations**	V_{NE}: 168 KIAS Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations
9.	**Rotor Speed Limitations**	Power on (AEO): Maximum 100 % (385 rpm) Minimum 95 % (365 rpm) Power off: Maximum 110 % (424 rpm) Minimum 90 % (346 rpm) Refer to approved RFM Section 1 for detailed information
10.	**Maximum Operating Altitude and Temperature**	
10.1	Altitude 15 000 ft (4 572 m) Hp	
10.2	Temperature Refer to approved RFM	
11.	**Operating Limitations**	VFR day and night, non-icing conditions Additional limitations for TO and LDG refer to approved RFM Section 1
12.	**Maximum Mass**	2 450 kg
13.	**Centre of Gravity Range**	Refer to approved RFM for C.G. envelope
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 835 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 5 for detailed information
15.	**Levelling Means**	Plumb line from ceiling reference point to the index plate located on passenger's compartment floor. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	One (1) pilot (right seat)
17.	**Maximum Passenger Seating Capacity**	Seven (7) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin

19.	**Maximum Baggage/ Cargo Loads**	150 kg at STA 4 920 mm or according to load distribution defined in RFM – Section 5 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg
20.	**Rotor Blade Control Movement**	MR (collective): min +4°40’ max +18°10’ TR: RH pedal -7° LH pedal +21° For rigging information refer to Maintenance Manual
21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	Refer to approved A109 Maintenance Manual Chapter 04
23.	**Wheels and Tyres**	360x135-6 tubeless

iv. Operating and Service Instructions

1.	**Flight Manual**	A109 Rotorcraft Flight Manual, approval letter 123.391/T, dated 21 May 1975 and later approved revision
2.	**Maintenance Manual**	A109 Maintenance Manual
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to approved RFM and related supplements for the approved mandatory and optional equipment

v. Operational Suitability Data

See Section 1, ii., item 9.

vi. Notes

1. Helicopters A109 Model can be converted in helicopter A109A Model according to the requirements of the RAI approved ‘Istruzione Tecnica n. A 109-I’.
2. Manufacturer's eligible serial numbers:

   Assembly drawing 109-9000-01-5 from s/n 7106 to s/n 7109.
3. The referenced Assembly Drawing 109-9000-01-5 was later replaced by the Type Design Definition document 109G0000X006/01 Rev. A and subsequent revisions.
4. Cabin Interior and Seating Configurations must be approved.

Section 2: A109A

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

A109A

1.3 Variant

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2. Airworthiness Category Small Rotorcraft

Small Rotorcraft

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See Section 13ii.

5. Type Certification Application Date to RAI

17 September 1975

6. State of Design Authority

EASA (pre-EASA: RAI/ENAC, Italy)

7. Type Certification Date by RAI

15 March 1976

8. Type Certificate n° by RAI

SO/A 156

9. Type Certificate Data Sheet n° by RAI

SO/A 156

10. 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.

17 September 1975

2. Airworthiness Requirements

FAR 27 / 29 Amdt. as defined here below. FAR 27 with Amdt. from 1 to 8 included, FAR 29 Paragraph 29.903 (b) “Category A, engine isolation” For the installation 109-0810-22 (all dashes approved) required for IFR (IMC) operations, with one or two pilots during day and night:

“Airworthiness Criteria for Helicopter Instrument Flight”, dated 15 December 1978 (RAI/FAA document).

3. Special Conditions

Special Conditions N°27-54-EU-17 dated 26 June 1973 forwarded with sheet N° 109.489/T, dated 3 July 1973

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

Shut-off valve, instead of FAR 27.1189

FAR 27.1305 (d), refuel quantity indicator for A109A up to s/n 7165.

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

8.1 Noise Requirements

see TCDSN UK.TC.R.00103

8.2 Emissions Requirements

n/a

9. Operational Suitability Data (OSD)

Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Refer to Drawing 109-9000-01-11/-15/-19/-23/-27 (See Note 3 in this Section).

2. Description

Light twin-engine aircraft, four (4) metallic blades, articulated main rotor, twin (2) blades teetering tail rotor, tricycle retractable landing gear, one (1) pilot and seven (7) passengers’ capacity. The A109A differs from A109 model for the installation of Allison 250-C20B Turbo Engines.

3. Equipment

Basic equipment required by the airworthiness rules (see Certification Basis) shall be installed on the helicopter for the Airworthiness Certificate release.

Besides are required the following equipment:

OAT Indicator P/N MS28028-1.

Low rotor rpm and engine failure warning system according to N° 109-0729-21 or 109-0729-31 and 109-0729-22

For IFR (IMC) operation with one or two pilots durning the day and night install IFR P/N 109-0810-22 (all dash approved) applicable to N.C. 7107, 7130 and subsequent.

Approved mandatory and optional equipment listed in report 109-07-03 “Elenco degli equipaggiamenti”.

Refer also to the Equipment list in RFM.

4. Dimensions

4.1 Fuselage Length: 10.71 m

Width: 2.88 m

Height: 3.30 m

4.2 Main Rotor Diameter: 11.00 m

4.3 Tail Rotor Diameter: 2.03 m

5. Engine

5.1 Model

Rolls–Royce Corporation (former: Allison) 2 x Model 250-C20B

5.2 Type Certificate

State of Design Engine TC/TCDS n°: FAA n°E4CE

EASA TC/TCDS n°: EASA.IM.E.052

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

Installed Engine Limits		
AEO	Take-Off (5 minutes)	346 shp, 113%
	Maximum Continuous	346 shp, 113%
OEI	Take-Off (5 minutes)	400 shp, 131%
	Maximum Continuous	385 shp, 126%
See approved Rotorcraft Flight Manual for TOT, N1 and transient		

Transmission Torque Limits
See approved Rotorcraft Flight Manual for information

5.3.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6. Fluids

6.1	Fuel	For all temperatures: MIL-T-5624 type JP4, ASTM D-1655 Jet B For temperatures higher than -18°C (0°F): MIL-T-5624 Type JP5, ASTM D-1655 Jet A, ASTM D-1655 Jet A1 For detailed information refer to approved RFM Section 1
6.2	Oil	Engines: MIL-L-7808 or MIL-L-23699 Transmission: MIL-L-7808 or MIL-L-23699 For detailed information refer to approved RFM Section 1

7. Fluid capacities

7.1	Fuel	Total usable: 550.0 litres (Two tanks capacity of 275 litres each) Refer to approved RFM for unusable fuel
7.2	Oil	Engines: 7.7 litres each Transmission: 12.0 litres Refer to approved RFM for non-drainable lubricant

8. Air Speed Limitations

V_{NE}: 158 KIAS at 2 600kg

V_{NE}: 168 KIAS at 2 450 kg

Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations

9. Rotor Speed Limitations

Power on (AEO):

Maximum 100 % (385 rpm)

Minimum 95 % (365 rpm)

Power off:

Maximum 110 % (424 rpm)

Minimum 90 % (346 rpm)

Refer to approved RFM Section 1 for detailed information

10. Maximum Operating Altitude and Temperature

10.1 Altitude 15 000 ft (4 572 m) at 2 450 kg

8 000gft (2400M) at 2 600 kg (See Note 1 in this section)

10.2 Temperature Refer to approved RFM

11. Operating Limitations

VFR day and night

IFR

Non-icing conditions

Additional limitations for TO and LDG refer to approved RFM Section 1

12.	**Maximum Mass**	2 450 kg 2 600 kg (See Note 1 in this Section)
13.	**Centre of Gravity Range**	Refer to approved RFM for CG envelope
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 835 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 5 for detailed information
15.	**Levelling Means**	Plumb line from ceiling reference point to the index plate located on passenger's compartment floor. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	One (1) pilot (right seat)
17.	**Maximum Passenger Seating Capacity**	Seven (7) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin
19.	**Maximum Baggage/ Cargo Loads**	150 kg at STA 4 920 mm or according to load distribution defined in RFM Section 5 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg
20.	**Rotor Blade Control Movement**	MR (collective): min +4°40' max +18°10' TR: RH pedal -7° LH pedal +21° For rigging information refer to Maintenance Manual
21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	Refer to approved A109/A109AII Maintenance Manual Chapter 04
23.	**Wheels and Tyres**	360x135-6 tubeless

iv. Operating and Service Instructions

1.	**Flight Manual**	Helicopter with s/n up to 7165: A109 Rotorcraft Flight Manual, approval letter 123.391/T, dated 2 June 1981, and later approved revisions. Helicopters with s/n 7166 and subs: A109A Rotorcraft Flight Manuals, approval letter 162.3961/T, dated 25 February 1980, and later approved revisions. For IFR operations refer to supplement 1, approved with n° 149.421/T, dated 18 July 1978
2.	**Maintenance Manual**	A109A/A109AII Maintenance Planning Manual A109A/A109AII Maintenance Manual
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to the section III.3 above and to approved RFM and related supplements for the approved mandatory and optional equipment

v. Operational Suitability Data

See Section 2, ii., item 9.

vi. Notes

1. To operate at 2 600 kg maximum mass, Model A109A shall embody provisions required by Technical Bulletin n. 109-20 and subsequent approved revisions.
2. Manufacturer’s eligible serial number:

   Assembly drawing 109-9000-01-11 from s/n 7110 to s/n 7144

   Assembly drawing 109-9000-01-15 from s/n 7115 to s/n 7125

   Assembly drawing 109-9000-01-19 from s/n 7126 to s/n 7135

   Assembly drawing 109-9000-01-23 from s/n 7136 to s/n 7165

   Assembly drawing 109-9000-01-27 from s/n 7166 to s/n 7255
3. The referenced Assembly Drawing 109-9000-01-11/-15/-19/-23/-27 was later replaced by the Type Design Definition document 109G0000X006/02 Rev. A and subsequent revisions.
4. Cabin Interior and Seating Configurations must be approved.

Section 3: A109AII

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

A109AII

1.3 Variant

-

2. Airworthiness Category Small Rotorcraft

Small Rotorcraft

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See Section 13ii.

5. Type Certification Application Date to RAI

12 March 1979

6. State of Design Authority

EASA (pre-EASA: RAI/ENAC, Italy)

7. Type Certification Date by RAI

2 June 1981

8. Type Certificate n° by RAI

SO/A 156

9. Type Certificate Data Sheet n° by RAI

SO/A 156

10. 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.

12 March 1979

2. Airworthiness Requirements

FAR 27 / 29 Amdt. as defined here below, FAR 27 with Amdt. 1 to 8 included, FAR 29 Paragraph 29.903 (b) “Category A, engine isolation”, Compliance with Paragraph FAR 27.927 (c) Amdt.12.

For the installation 109-0810-22 (all dashes approved) required for IFR (IMC) operations, with one or two pilots during day and night:

“Airworthiness Criteria for Helicopter Instrument Flight”, dated 15 December 1978 (RAI and FAA document)

3. Special Conditions

Special Conditions N°27-54-EU-17 dated 26 June 1973 forwarded with sheet N° 109.489/T, dated 3 July 1973

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

Shut-off valve, instead of FAR 27.1189

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

8.1 Noise Requirements

see TCDSN UK.TC.R.00103

8.2 Emissions Requirements

n/a

9. Operational Suitability Data (OSD)

Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Refer to Drawing 109-9000-01-31 (See Note 2 in this Section).

2. Description

Light twin-engine aircraft, four (4) metallic blades, articulated main rotor, twin (2) blades teetering tail rotor, tricycle retractable landing gear, one (1) pilot and seven (7) passengers’ capacity. The A109AII differs from A109 model for the possibility of installing of Allison 250-C20B or Allison 250-C20R/1 engine.

3. Equipment

Basic equipment required by the airworthiness rules (see Certification Basis) shall be installed on the helicopter for the Airworthiness Certificate release.

Besides are required the following equipment:

- OAT indicator P/N MS28028-1

- Low rotor rpm and engine failure warning system according to drawing N° 109-0729-21 or 109-0729-31 and 109-0729-22.

For IFR (IMC) operation with one or two pilots during day and night install IFR P/N 109-0810-22 (all dashes approved).

Approved mandatory and optional equipment listed in report 109-07-06 “Elenco degli equipaggiamenti”.

Refer also to the Equipment list in RFM.

4. Dimensions

4.1 Fuselage Length: 10.71 m

Width: 2.88 m

Height: 3.30 m

4.2 Main Rotor Diameter: 11.00 m

4.3 Tail Rotor Diameter: 2.03 m

5. Engine

5.1 Model

Rolls–Royce Corporation (former: Allison) 2 x Model 250-C20B, or, 2 x Model 250-C20R/1

5.2 Type Certificate

State of Design Engine TC/TCDS n°: FAA n°E4CE

EASA TC/TCDS n°: EASA.IM.E.052

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

Installed Engine Limits 250-C20R/1 Engines		
AEO	Take-Off (5 minutes)	370 shp, 97%
	Maximum Continuous	370 shp, 97%
OEI	(Emergency)(5 minutes)	450 shp, 118%
See approved Rotorcraft Flight Manual for TOT, N1 and transient		

Installed Engine Limits 250-C20B Engines		
AEO	Take-Off (5 minutes)	370 shp, 121%
	Maximum Continuous	370 shp, 121%
OEI	(Emergency)(5 minutes)	420 shp, 137%
See approved Rotorcraft Flight Manual for TOT, N1 and transient		

Transmission Torque Limits
See approved Rotorcraft Flight Manual Section 1 for information

5.3.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6. Fluids

6.1	Fuel	For all temperatures: MIL-T-5624 type JP4, ASTM D-1655 Jet B For temperatures higher than -18°C (0°F): MIL-T-5624 Type JP5, ASTM D-1655 Jet A, ASTM D-1655 Jet A1 For detailed information refer to approved RFM Section 1
6.2	Oil	Engines: MIL-L-7808G and subsequent or MIL-L-23699 (for ambient temperature above -40°C) Transmission: MIL-L-7808 G and subsequent or MIL-L-23699 (for ambient temperature above -40°C) For detailed information see approved RFM Section 1

7. Fluid capacities

7.1	Fuel	Total usable: 550.0 litres (Two tanks capacity of 275 litres each) Refer to approved RFM for unusable fuel
7.2	Oil	Engines: 7.7 litres each Transmission: 12.0 litres Refer to approved RFM for non-drainable lubricant

8. Air Speed Limitations

V_{NE}: 168 KIAS

Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations

9. Rotor Speed Limitations

Power on (AEO):

Maximum 100 % (385 rpm)

Minimum 95 % (365 rpm)

Power off:

Maximum 110 % (424 rpm)

Minimum 90 % (346 rpm)

Refer to approved RFM Section 1 for detailed information

10. Maximum Operating Altitude and Temperature

10.1 Altitude 15 000 ft (4 572 m)

10.2 Temperature Refer to approved RFM

11. Operating Limitations

VFR day and night

IFR

Non-icing conditions

Additional limitations for TO and LDG refer to approved RFM Section 1

12. Maximum Mass

2 600 kg

13.	**Centre of Gravity Range**	Refer to approved RFM for CG envelope
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 835 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 5 for detailed information
15.	**Levelling Means**	Plumb line from ceiling reference point to the index plate located on passenger's compartment floor. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	One (1) pilot (right seat)
17.	**Maximum Passenger Seating Capacity**	Seven (7) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin
19.	**Maximum Baggage/ Cargo Loads**	150 kg at STA 4 920 mm or according to load distribution defined in RFM – Section 5 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg
20.	**Rotor Blade Control Movement**	MR (collective): min +4°40' max +18°10' TR: RH pedal -7° LH pedal +21° For rigging information refer to Maintenance Manual
21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	Refer to approved A109/A109AII Maintenance Manual Chapter 04
23.	**Wheels and Tyres**	360x135-6 tubeless

iv. Operating and Service Instructions

1.	**Flight Manual**	A109AII Rotorcraft Flight Manual, approval letter n° 173.928/T, dated 2 June 1981, and later approved revisions
2.	**Maintenance Manual**	A109A/A109AII Maintenance Planning Manual A109A/A109AII Maintenance Manual
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to the section III.3 above and to approved Rotorcraft Flight Manual and related supplements for the approved mandatory and optional equipment

v. Operational Suitability Data

See Section 3, ii., item 9.

vi. Notes

1. Manufacturer’s eligible serial number:

   Assembly drawing 109-9000-01-31 from s/n 7256 to s/n 7600
2. The referenced Assembly Drawing 109-9000-01-31 was later replaced by the Type Design Definition document 109G0000X006/03 Rev. A and subsequent revisions.
3. Cabin Interior and Seating Configurations must be approved.

Section 4: A109C

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

A109C

1.3 Variant

-

2. Airworthiness Category Small Rotorcraft

Small Rotorcraft

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See Section 13ii.

5. Type Certification Application Date to RAI

14 May 1987

6. State of Design Authority

EASA (pre-EASA: RAI/ENAC, Italy)

7. Type Certification Date by RAI

20 June 1989

8. Type Certificate n° by RAI

SO/A 156

9. Type Certificate Data Sheet n° by RAI

SO/A 156

10. 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.

14 May 1987

2. Airworthiness Requirements

FAR 27 / 29 Amdt. as defined here below. FAR 27 with Amdt. from 1 to 8 included, FAR 29 Paragraph 29.903 (b) “Category A, engine isolation” Compliance with Paragraph FAR 27.927 (c) Amdt.12. For the installation 109-0810-22 (all dashes approved) required for IFR (IMC) operations, with one or two pilots durning day and night:

“Airworthiness Criteria for Helicopter Instrument Flight” dated 15 December 1978 (RAI and FAA documents)

3. Special Conditions

Special Conditions N°27-54-EU-17 dated 26 June 1973 forwarded with sheet N° 109.489/T, dated 3 July 1973

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

Shut-off valve, instead of FAR 27.1189

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

8.1 Noise Requirements

see TCDSN UK.TC.R.00103

8.2 Emissions Requirements

n/a

9. Operational Suitability Data (OSD)

Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Refer to Drawing 109-9000-01-135 (See Note 2 in this Section).

2. Description

Light twin-engine aircraft, four (4) composite MR blades, articulated main rotor, twin (2) blades teetering tail rotor, tricycle retractable landing gear, one (1) pilot and seven (7) passengers’ capacity. The A109C differs from A109AIII model for the installation of composite MR blades and increased maximum mass.

3. Equipment

Basic equipment required by the airworthiness rules (see Certification Basis) shall be installed on the helicopter for the Airworthiness Certificate release.

Besides are required the following equipment:

OAT Indicator P/N MS28028-1.

Lower rotor rpm and engine failure warning system according to drawing N° 109-0741-06.

For IFR (IMC) operation with one or two pilots during day and night install IFR P/N 109-0810-22 (all dashes approved).

Approved mandatory and optional equipment listed in report 109-07-09 “Elenco degli equipaggiamenti”.

Refer also to the Equipment list in RFM.

4. Dimensions

4.1 Fuselage Length: 11.45 m

Width: 2.88 m

Height: 3.50 m

4.2 Main Rotor Diameter: 11.00 m

4.3 Tail Rotor Diameter: 2.00 m

5. Engine

5.1 Model

Rolls–Royce Corporation (former: Allison) 2 x Model 250-C20R/1

5.2 Type Certificate

State of Design Engine TC/TCDS n°: FAA n°E4CE

EASA TC/TCDS n°: EASA.IM.E.052

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

Installed Engine Limits		
AEO	Take-Off (5 minutes)	395 shp, 104%
	Maximum Continuous	380 shp, 100%
OEI	(Emergency) Maximum Continuous	450 shp, 118%
See approved Rotorcraft Flight Manual for TOT, N1 and transient		

Transmission Torque Limits
See approved Rotorcraft Flight Manual for information

5.3.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6. Fluids

6.1	Fuel	For all temperatures: MIL-T-5624 type JP4, ASTM D-1655 Jet B For temperatures higher than -18°C (0°F): MIL-T-5624 Type JP5, ASTM D-1655 Jet A, ASTM D 1655 Jet A1 For detailed information refer to approved RFM Section 1
6.2	Oil	Engines: MIL-L-7808G and subsequent or MIL-L-23699 (for ambient temperature above -40°C) Transmission: MIL-L-7808G and subsequent or MIL-L-23699 (for ambient temperature above -40°C) For detailed information refer to approved RFM Section 1

7. Fluid capacities

7.1	Fuel	Total usable: 550 litres (Two tanks capacity of 275 litres each) (Refer to approved RFM for unusable fuel)
7.2	Oil	Engines: 7.7 litres each Transmission: 12.0 litres (Refer to approved RFM for non-drainable lubricant)

8. Air Speed Limitations

V_{NE}: 168 KIAS

Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations

9. Rotor Speed Limitations

Power on (AEO):

Maximum 100 % (385 rpm)

Minimum 95 % (365 rpm)

Power off:

Maximum 110 % (424 rpm)

Minimum 90 % (346 rpm)

Refer to approved RFM Section 1 for detailed information

10. Maximum Operating Altitude and Temperature

10.1 Altitude 15 000 ft (4 572 m)

10.2 Temperature Refer to approved RFM

11. Operating Limitations

VFR day and night

IFR

Non-icing conditions

Additional limitations for TO and LDG refer to approved RFM Section 1

12.	**Maximum Mass**	2 720 kg
13.	**Centre of Gravity Range**	Refer to approved RFM for CG envelope
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 835 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 5 for detailed information
15.	**Levelling Means**	Plumb line from ceiling reference point to the index plate located on passenger's compartment floor. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	One (1) pilot (right seat)
17.	**Maximum Passenger Seating Capacity**	Seven (7) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin
19.	**Maximum Baggage/ Cargo Loads**	150 kg at STA 4 920 mm or according to load distribution defined in RFM – Section 5 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg
20.	**Rotor Blade Control Movement**	MR (collective): min +4°40' max +18°10' TR: RH pedal -7° LH pedal +21° For rigging information refer to Maintenance Manual
21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	Refer to approved A109C Maintenance Manual Chapter 04
23.	**Wheels and Tyres**	360x135-6 tubeless

iv. Operating and Service Instructions

1.	**Flight Manual**	A109C Rotorcraft Flight Manual, approval letter 256.357/SCMA, dated 19 June 1989, and later approved revisions.
2.	**Maintenance Manual**	A109C Maintenance Planning Manual A109C Maintenance Manual
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to the Section 4, iii. Item 3 above and to approved RFM and related supplements for the approved mandatory and optional equipment

v. Operational Suitability Data

See Section 4,ii.,9.

vi. Notes

1. Manufacturer's eligible serial numbers:

   Assembly drawing 109-9000-01-135 from s/n 7601 to s/n 7800.
2. The referenced Assembly Drawing 109-9000-01-135 was later replaced by the Type Design Definition document 109G0000X006/04 Rev. A and subsequent revisions.
3. Cabin Interior and Seating Configurations must be approved.

Section 5: A109K2

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

A109K2

1.3 Variant

-

2. Airworthiness Category Small Rotorcraft

Small Rotorcraft

Restricted Category (differs from A109K2 model for the installation of Kit P/N 109-0811-36 or of Kit P/N 109-0811-70 for E.M.S operations).

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See Section 13ii.

5. Type Certification Application Date to RAI

Normal category: 9 July 1984

Restricted category: 4 March 1993

6. State of Design Authority

EASA (pre-EASA: RAI/ENAC, Italy)

7. Type Certifcation Date by RAI

Normal category: 23 January 1992

Restricted category: 7 July 1993

8. Type Certificate n° by RAI

SO/A 156

9. Type Certificate Data Sheet n° by RAI

SO/A 156

10. 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.

Normal category: 9 July 1984

Restricted category: 4 March 1993

2. Airworthiness Requirements

Normal Category and Restricted Category:
FAR 27 / 29, JAR 29 Amdt. as defined here below,
FAR 27 with Amdt. 1 to 8 included.
Compliance with Paragraphs:
FAR 27.927 (c) Amdt. 12; FAR 27.25 Amdt. 11; FAR 27.865 Amdt. 11; FAR 27.923 Amdt. 12 (for reference only); FAR 27.939 Amdt.11; FAR 27.951 Amdt. 9; FAR 27.1093 Amdt. 20;
FAR 29 Paragraph 29.903 (b) “Category A; engine isolation”.
For the installation 109-0810-22 (all dashes approved) required for IFR (IMC) operations, with one or two pilots during day and night:
FAR 27 App. B Amdt. 19, FAR 27.672 Amdt. 21, FAR 27.1309 Amdt. 21, FAR 27.1329 Amdt. 21, FAR 27.1335 Amdt. 13.
For operation with “Take-off and landing procedures and performances data on clear airfield and helipad with critical engine failure”:
JAR 29.45 (a), (b)(2) Base Amdt., JAR 29.49 (a) Base Amdt., JAR 29.51 Base Amdt., JAR 29.53 Base Amdt., JAR 29.55 Base Amdt., JAR 29.59 Base Amdt., JAR 29.60 Base Amdt., JAR 29.61 Base Amdt., JAR 29.62 Base Amdt., JAR 29.64 Base Amdt., JAR 29.65 (a) Base Amdt., JAR 29.67 (a) Base Amdt., JAR 29.75 Base Amdt., JAR 29.77 Base Amdt., JAR 29.79 Base Amdt., JAR 29.81 Base Amdt., JAR 29.85 Base Amdt.,
JAR 29.87 (a) Base Amdt., FAR 29.861 (a) Amdt.26, FAR 29.901 (c) Amdt.25.
For engines Installation only:
FAR 29.903 (b), (c), (e) Amdt. 31, FAR 29.908 (a) Amdt. 25, FAR 27.923 Amdt. 23, FAR 27.927 (a), (b) Amdt. 12, FAR 29.927 (c)(1) Amdt. 26, FAR 29.953 (a) Base Amdt., JAR 29.1027 (a) Base Amdt., JAR 29.1045 (a)(1), (b), (c), (d), (f) Base Amdt., JAR 29.1047 (a) Base Amdt., JAR 29.1181 (a) Base Amdt.,JAR 29.1187 (e) Base Amdt., JAR 29.1189 (c) Base Amdt., JAR 29.1191 (a)(1) Base Amdt., JAR 29.1193 (e)
Base Amdt., JAR 29.1305 (a)(6), (b) Base Amdt., JAR 29.1309 (b)(2)(i), (d) Base Amdt., JAR 29.1323 (c)(1) Base Amdt., JAR 29.1331 (b) Base Amdt., JAR 29.1587 (a) Base Amdt. For emergency floats certification:
FAR 27.563 Amdt. 26, FAR 27.801 Amdt. 11, FAR 27.807 Amdt. 26, FAR 27.1411 Amdt. 11, FAR 27.1415 Amdt. 11.

3. Special Conditions

Special Conditions N°27-54-EU-17 dated 26 June 1973 forwarded with sheet N° 109.489/T, dated 3 July 1973

4. Exemptions

Para 27.1(a) Base Amdt. (max weight 6 000 lb) for restricted category.

Para 27.1(a) Base Amdt. (max weight 6 000 lb) for normal category (see Note 1 in this Section)

5. Deviations

None.

6. Equivalent Safety Findings

Shut-off valve, instead of FAR 27.1189

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

8.1 Noise Requirements

see TCDSN UK.TC.R.00103

8.2 Emissions Requirements

ICAO Annex 16, Vol.II, Ed. 1993 (see Note 2 in this Section)

9. Operational Suitability Data (OSD)

Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Refer to Drawing 109-9000-01-139 (See Note 5 in this Section).

2. Description

Light twin-engine aircraft, four (4) composite MR blades, articulated main rotor, twin (2) blades teetering tail rotor, tricycle fixed landing gear, one (1) pilot and seven (7) passengers in normal category; one (1) pilot and six (6) passengers in restricted category. The A109K2 differs from A109C model for the installation of Turbomeca Arriel 1K1 turbo engines.

3. Equipment

Basic equipment required by the airworthiness rules (see Certification Basis) shall be installed on the helicopter for the Airworthiness Certificate release.

Besides are required the following equipment:

OAT Indicator P/N MS28028-1.

Lower rotor rpm and engine failure warning system according to drawing N° 109-0741-27 and 109-0752-40.

For IFR (IMC) operation with one or two pilots during day and night install IFR P/N 109-0810-22 (all dashes approved).

For Restricted Category install Kit P/N 109-0811-36 or of Kit P/N 109-0811-70 for E.M.S operations.

For operations with “Take-off and landing procedures and performances data on clear airfield and helipad with critical engine failure”, install P/N 109-0822-47.

Approved mandatory and optional equipment listed in report 109-07-14 “Elenco degli equipaggiamenti”. Refer also to the Equipment list in RFM

4. Dimensions

4.1 Fuselage Length: 11.45 m

Width: 2.88 m

Height: 3.50 m

4.2 Main Rotor Diameter: 11.00 m

4.3 Tail Rotor Diameter: 2.00 m

5. Engine

5.1 Model

Safran Helicopter Engines (former:Turbomeca)

2 x Model Arriel 1K1

5.2 Type Certificate

State of Design Engine TC/TCDS n°: DGAC n°M5

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

Installed Engine Limits		
AEO	Take-Off (5 minutes)	450 shp, 100% (Nr 100%)
	Maximum Continuous	450 shp, 100% (Nr 100%)
OEI	(Emergency) 2.5 min	640 shp, 71.1% (Nr 100%)
	(Emergency) Maximum Continuous	560 shp, 62.2% (Nr 100%)
See approved Rotorcraft Flight Manual for TOT, N1 and transient		

Transmission Torque Limits
See approved Rotorcraft Flight Manual for information

5.3.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6. Fluids

6.1 Fuel

For all temperatures:

MIL-T-5624 type JP4, JP5, ASTM D-1655 Jet A, Jet A1, Jet B, MIL-T-83133 type JP8, AIR 3404-F43 (AVCAT) For detailed information refer to approved RFM Section 1

6.2 Oil

Engines: MIL-L-7808 or MIL-L-23699
Transmission: DOD-L-85734 or MIL-L-23699

For detailed information refer to approved RFM Section 1

7. Fluid capacities

7.1 Fuel

Total usable: 468 litres

See RFM for unusable fuel and for fuel capacity when installed auxiliary tanks.

7.2 Oil

Engines: 7.7 litres each

Transmission: 12.0 litres

(Refer to approved RFM for non-drainable lubricant)

8. Air Speed Limitations

V_{NE}: 152 KIAS

Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations

9.	**Rotor Speed Limitations**	Power on (AEO): Maximum 100 % (384 rpm) Minimum 97 % (372 rpm) Power off: Maximum 110 % (422 rpm) Minimum 90 % (346 rpm) Refer to approved RFM Section 1 for detailed information

10. Maximum Operating Altitude and Temperature

10.1 Altitude 15 000 ft (4 572 m)

10.2 Temperature Refer to approved RFM

11.	**Operating Limitations**	VFR day and night IFR Non-icing conditions Operation with “Take-off and landing procedures and performance data on clear airfield and helipad with critical engine failure” (See Note 3 in this Section) Additional limitations for TO and LDG refer to approved RFM Section 1
12.	**Maximum Mass**	2 850 kg (See Note 1 in this Section)
13.	**Centre of Gravity Range**	Refer to approved RFM for CG envelope
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 835 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 6 for detailed information
15.	**Levelling Means**	Plumb line from ceiling reference point to the index plate located on passenger’s compartment floor. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	One (1) pilot (right seat)
17.	**Maximum Passenger Seating Capacity**	Normal Category: Seven (7) passengers Restricted Category: Six (6) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin
19.	**Maximum Baggage/ Cargo Loads**	150 kg at STA 4 920 mm or according to load distribution defined in RFM – Section 6 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg

20.	**Rotor Blade Control Movement**	MR (collective): min +3° max +11° TR: RH pedal -7° LH pedal +23° For rigging information refer to Maintenance Manual
21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	Refer to approved A109K2 Maintenance Manual Chapter 04
23.	**Wheels and Tyres**	360x135-6 tubeless

iv. Operating and Service Instructions

1.	**Flight Manual**	A109K2 VFR RFM, approval letter 97/3166/MAE dated 31 July 1997, and later approved revisions. A109K2 IFR RFM, approval letter 97/3166/MAE dated 31 July 1997, and later approved revisions. For operations with “Take-off and landing procedures and performance data on clear airfield and helipad with critical engine failure” refer to Appendix 25 to the flight manuals A109K2 EMS (Restricted Category): complete the Rotorcraft Flight Manuals with Appendix 8 for kit P/N 109-0811-36, approval letter N°97/3166/MAE, dated 31 July 1997 and later approved revisions and Appendix 23 for kit P/N 109-0811-70, approval letter N°97/3166/MAE, dated 31 July 1997, and later approved revisions.
2.	**Maintenance Manual**	A109K2 Maintenance Planning Manual A109K2 Maintenance Manual
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to the section III.3 above and to approved Rotorcraft Flight manuals and related supplements for the approved mandatory and optional equipment

v. Operational Suitability Data

See Section 5, ii., item 9.

vi. Notes

1. Weight increase (2 850 kg) in normal category for standard C.N. release A109K2 and A109E: Following the request forwarded with letter 93/09 dated 4 April 1993 (for A109K2) and 97/3.335 dated 2 June 1997 (for A109E); following the approval expressed with letter 96/1429/MAE dated 5 April 1996, as conclusion of certification procedures and relevant RFM revisions, it has been granted the exemption to paragraph 27.1(a) therefore the standard C.N can be obtained in normal category with take-off maximum weight of 2850 kg (approval letters 97/3166/MAE dated 31 July 1997 for A109K2 and 97/3147/MAE dated 30 July 1997 for A109E).

2. The fuel vented from the injector line at the engine shutdown, is recollected into the main fuel tank, according to the Drawing 109-0840-20
3. For the operation with ‘Take-off and landing procedures and performances data on clear airfield and helipad with critical engine failure’, the A109K2 model (normal and restricted category) must install the ‘Engine compartments fire extinguisher’ installation P/N 109-0815-50.
4. Manufacturer’s eligible serial number:

   Assembly drawing 109-9000-01-139 from s/n 10001 to s/n 10100
5. The referenced Assembly Drawing 109-9000-01-139 was later replaced by the Type Design Definition document 109G0000X006/05 Rev. A and subsequent revisions.
6. Cabin Interior and Seating Configurations must be approved.

Section 6: A109E

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

A109E

1.3 Variant

-

2. Airworthiness Category Small Rotorcraft

Small Rotorcraft and Equivalent Category A operations

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See Section 13ii.

5. Type Certification Application Date to RAI

26 July 1993

6. State of Design Authority

EASA (pre-EASA: RAI/ENAC, Italy)

7. Type Certification Date by RAI

31 May 1996

8. Type Certificate n° by RAI

SO/A 156

9. Type Certificate Data Sheet n° by RAI

SO/A 156

10. 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: 26 July 1193, for OSD elements: 17 February 2014.

2. Airworthiness Requirements

Normal Category and Restricted Category:
FAR 27 / 2, JAR 29 Amdt. as defined here below,
FAR 27 with Amdt. 1 to 8 included.
FAR 29 Paragraph 29.903 (b) “Category A, engine isolation”,
FAR 27.25 Amdt. 11; FAR 27.923 Amdt. 12 (for reference only); FAR 27.939 Amdt. 11; FAR 27.951 Amdt. 9; FAR 27.1093 Amdt. 20
FAR 27 paragraphs: 27.2 Amdt. 28; 27.21 Amdt. 21; 27.45 Amdt. 21; 27.79 Amdt. 21; 27.141 Amdt. 21; 27.143 Amdt. 21; 27.175 Amdt. 21; 27.177 Amdt. 21; 27.401 Amdt. 27; 27.610 Amdt. 21; 27.901 Amdt. 23; 27.903 Amdt. 23; 27.927 Amdt. 23; 27.954 Amdt. 23; 27.1091 Amdt. 23; 27.1189 Amdt. 23; 27.1305 Amdt. 23; 27.1321 Amdt. 13; 27.1322 Amdt. 11; 27.1323 Amdt. 13; 27.1325 Amdt. 13; 27.1505 Amdt. 21; 27.1519 Amdt. 21; 27.1521 Amdt. 23; 27.1527 Amdt. 14; 27.1529 Amdt. 18; 27.1549 Amdt. 23; 27.1555 Amdt. 21; 27.1557 Amdt. 11; 27.1581 Amdt. 14; 27.1583 Amdt. 16; 27.1585 Amdt. 21; 27.1587 Amdt. 21.
For “Equivalent Category A” operations as per JAR OPS 3.480 in addition to what listed above is required the compliance with following paragraphs:
JAR 29.45 (a), (b)(2) Base Amdt., JAR 29.49 (a) Base Amdt., JAR 29.51 Base Amdt., JAR 29.53 Base Amdt., JAR 29.55 Base Amdt., JAR 29.59 Base Amdt., JAR 29.60 Base Amdt., JAR 29.61 Base Amdt., JAR 29.62 Base Amdt., JAR 29.64 Base Amdt., JAR 29.65 (a) Base Amdt., JAR 29.67 (a) Base Amdt., JAR 29.75 Base Amdt., JAR 29.77 Base Amdt., JAR 29.79 Base Amdt., JAR 29.81 Base Amdt., JAR 29.85 Base Amdt.,
JAR 29.87 (a) Base Amdt., JAR 29.571 Base Amdt. (AC Material only: AC29-2A Item 230 paragraph 10), JAR 29.861 (a) Base Amdt., JAR 29.901 (c) Base Amdt., JAR 29.903 (b), (c), (e) Base Amdt., JAR 29.908 (a) Base Amdt., JAR 29.953 (a) Base Amdt., JAR 29.1027 (a) Base Amdt., JAR 29.1045 (a)(1), (b), (c), (d), (f)
Base Amdt., JAR 29.1047 (a) Base Amdt., JAR 29.1181 (a) Base Amdt., JAR 29.1187 (e) Base Amdt., JAR 29.1189 (c) Base Amdt., JAR 29.1191 (a)(1) Base Amdt., JAR 29.1193 (e) Base Amdt., JAR 29.1195 (a), (d) Base Amdt., JAR 29.1197 Base Amdt., JAR 29.1199 Base Amdt., JAR 29.1201 Base Amdt., JAR 29.1305 (a)(6), (b) Base Amdt., JAR 29.1309 (b)(2)(i), (d) Base Amdt., JAR 29.1323 (c)(1) Base Amdt., JAR 29.1331 (b) Base Amdt., JAR 29.1351 (d)(2) Base Amdt., JAR 29.1587 (a) Base Amdt.
For Emergency floats certification:
FAR 27.563 Amdt. 26, FAR 27.801 Amdt. 11, FAR 27.807 Amdt. 26, FAR 27.1411 Amdt. 11, FAR 27.1415 Amdt. 11.
For the installation 109-0810-22 (all dashes approved) required for IFR (IMC) operations, with one or two pilots during day and night:
FAR 27 App. B Amdt. 19, FAR 27.672 Amdt. 21, FAR 27.1309 Amdt. 21, FAR 27.1329 Amdt. 21, FAR 27.1335 Amdt. 13.
For the A109E with Skid Landing Gear Installation P/N 109-0812-57-101:
In addition to what listed above is required the compliance with following paragraphs:
FAR 27.1 Amdt. 37; FAR 27.25 Amdt. 36; FAR 27.29 Amdt. 14; FAR 27.33 Amdt. 14; FAR 27.65 Amdt. 33; FAR 27.67 Amdt. 23; FAR 27.75 Amdt. 14; FAR 27.151 Amdt. 21; FAR 27.161 Amdt. 21; FAR 27.173 Amdt. 21; FAR 27.175 Amdt. 34; FAR 27.307 Amdt. 26; FAR 27.321 Amdt. 11; 27.337 Amdt. 26; FAR 27.339 Amdt. 11; FAR 27.351 Amdt. 34; FAR 27.391 Amdt. 34; FAR 27.395 Amdt. 26; FAR 27.397 b) Amdt. 11; FAR 27.501 Amdt. 26; FAR 27.571 Amdt. 26; FAR 27.602 dated 24/08/99; FAR 27.603 Amdt. 16; FAR 27.605 Amdt. 16; FAR 27.610 Amdt. 37; FAR 27.613 Amdt. 26; FAR 27.621 Amdt. 34; FAR 27.625 Amdt. 35; FAR 27.629 Amdt. 26; FAR 27.663 Amdt. 26; FAR 27.675 Amdt. 16; FAR 27.685 Amdt. 26; FAR 27.727 Amdt. 26; FAR 27.863 Amdt. 16; FAR 27.917 Amdt. 11; FAR 27.923 Amdt. 29; FAR 27.1141 Amdt. 33; FAR 27.1151 Amdt. 33; FAR 27.1163 Amdt. 23; FAR 27.1185 Amdt. 37; FAR 27.1187 Amdt. 37;
FAR 27.1329 Amdt. 35; FAR 27.1365 Amdt. 35; FAR 27.1501 Amdt. 14; FAR 27.1525 Amdt. 21.

3. Special Conditions

Special Conditions N°27-54-EU-17 dated 26 June 1973 forwarded with sheet N° 109.489/T, dated 3 July 1973

Special Condition N°94/253/Mae, dated 4 May 1994 for HIRF;

Special Condition N°00/1479/MAE, dated 11 May 2000 ENAC D-1, issue 2 for cargo hooks P/N 109-0810-31 and P/N 109-0811-75 (refer to D-1).

4. Exemptions

Para 27.1(a) Base Amdt. (Max weight 6 000 lb) for normal category (see Note 2 in this Section)

5. Deviations

None.

6. Equivalent Safety Findings

Shut-off valve, instead of FAR 27.1189

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

8.1 Noise Requirements

see TCDSN UK.TC.R.00103

8.2 Emissions Requirements

ICAO Annex 16, Vol.II, Ed.1993 (see Note 3 in this Section)

9. Operational Suitability Data (OSD)

9.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1 (refer to A-MMEL)

9.2 Flight Crew Data (FCD)

Until and including 16 May 2018: Commission Regulation (EU) N.748/2012 and 69/2014 for Flight Crew Data / Common Procedures Document for conducting Operational Evaluation Board; From 17 May 2018: CS-FCD Initial Issue

9.3 Simulation Data (SIMD)

Reserved

9.4 Maintenance Certifying Staff Data (MCSD)

Reserved

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Refer to Drawing 109-9000-01-151 (See Note 6 in this Section).

2. Description

Normal Category and “Equivalent Cat A” operations. Light twin-engine aircraft, four (4) composite MR blades, articulated (with elastomeric bearings) main rotor, twin (2) blades teetering tail rotor, tricycle retractable landing gear or skid landing gear for helicopters equipped with kit P/N 109-0812-57-101, one (1) pilot and seven (7) passengers’ capacity.

The A109E differs from A109K2 model for the installation of Pratt & Whitney Canada PW206C or Turbomeca Arrius 2K1 turbo engines, controlled by FADEC, and for the new cockpit with Integrated Display System (IDS).

3. Equipment

Basic equipment required by the airworthiness rules (see Certification Basis) shall be installed on the helicopter for the Airworthiness Certificate release.

Besides are required the following equipment:

Data relevant to outside air temperature are provided from IDS and external probe identified by P/N E22307-2-4

Low rotor rpm and engine failure warning system according to drawing N° 109-0753-28

For “Equivalent Category A” operations as per JAR OPS 3.480: install P/N 109-0811-39 (all dashes approved)

For IFR (IMC) operation with one or two pilots during day and night: install IFR P/N 109-0810-22 (all dashes) applicable to s/n 11001 and subsequent.

For the A109E equipped with Skid Landing Gear installation: skid landing gear P/N 109-0570-69-103, main rotor P/N 109-0112-02-101 and engines Pratt & Whitney Canada. PW206C controlled by FADEC. Approved mandatory and optional equipment listed in report 109-07-16 “Elenco degli equipaggiamenti” Refer also to the Equipment list in RFM

4. Dimensions

4.1 Fuselage Length: 11.45 m

Width: 2.88 m

Height: 3.50 m

For the A109E helicopter equipped with skid landing gear kit P/N 109-0812-57-101:

Height: 3.54 m

4.2 Main Rotor Diameter: 11.00 m

4.3 Tail Rotor Diameter: 2.00 m

5. Engine

5.1.1 Model

Pratt & Whitney Canada

2 x Model PW206C controlled by FADEC

5.1.2 Type Certificate

State of Design Engine TC/TCDS n°: TCCA E-23

EASA TC/TCDS n°: EASA.IM.E.017

Or

5.1.3 Model

Safran Helicopter Engine (Former:Turbomeca)

2 x Model Arrius 2K1 controlled by FADEC

5.1.4 Type Certificate

State of Design Engine TC/TCDS n°: DGAC M20

EASA TC/TCDS n°: EASA.E.029

5.2 Limitations

5.2.1 Installed Engine Limitations and Transmission Torque Limits

Installed Engine Limits – PW206C Engines		
AEO	Take-Off (5 minutes)	450 shp, 100% (Nr 100%)
	Maximum Continuous	450 shp, 100% (Nr 100%)
OEI	(Emergency) 2.5 min	640 shp, 142% (Nr 100%)
	(Emergency) Maximum Continuous	560 shp, 124% (Nr 100%)
See approved Rotorcraft Flight Manual for TOT, N1 and transient		

Installed Engine Limites – Arrius 2K1 Engines		
AEO	Take-Off Power	450 shp, 100% (Nr 100%)
	Maximum Continuous	450 shp, 100% (Nr 100%)
OEI	(Emergency) 2.5 min	640 shp, 142% (Nr 100%)
	(Emergency Maximum Continuous	560 shp, 124% (Nr 100%)
See approved Rotorcraft Flight manuals for TOT, N1 and Transient		

Transmission Torque Limits
See approved Rotorcraft Flight Manual Section 1

5.2.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6. Fluids

6.1 Fuel

PW206C:

For all temperatures:

ASTM D-1655 Jet A, Jet A1, Jet A2, Jet B

Military Specifications (for reference only):

MIL-T-83133 type JP-8, MIL-T-5624 type JP4, JP5

Arrius 2K1:

For all temperatures:

ASTM D-1655 Jet A, Jet A1

Military Specifications (for reference only): MIL-T-83133 type JP-8; MIL-T-5624 type JP5

For detailed information refer to approved RFM Section 1

6.2 Oil

Engines:

PW206C:

MIL-PRF-23699F (MIL-L-23699) or PWA-521

Arrius 2K1:

MIL-PRF-23699 (MIL-L-23699), or, MIL-L-PRF-7808 (MIL-L-7808)

Transmission:

DOD-L-85734 or MIL-PRF-23699 (MIL-L-23699)

For detailed information refer to approved RFM Section 1

7. Fluid capacities

7.1 Fuel

Total usable: 595 litres

See RFM for unusable fuel and for fuel capacity when installed auxiliary tanks.

7.2 Oil

Engines:

PW206C: 5.12 litres each engine

Arrius 2K1: 4.30 litres each engine

(Refer to RFM for non-drainable lubricant)

Transmission: 11.0 litres

(Refer to RFM for non-drainable lubricant)

8. Air Speed Limitations

V_{NE}: 168 KIAS Power on

V_{NE}: 128 KIAS Power off/OEI

Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations

9.	**Rotor Speed Limitations**	Power on (AEO): Maximum 102 % (394 rpm) Minimum 99% (380 rpm) Power on (OEI) Maximum 102% (394 rpm) Minimum 90% (346 rpm) Power off: Maximum 110 % (422 rpm) Minimum 90% (346 rpm) Refer to approved RFM Section 1 for detailed information

10. Maximum Operating Altitude and Temperature

10.1 Altitude 15 000 ft (4 572 m)

Maximum operating altitude: 20 000 ft (6 096 m) See approved RFM Section 1 for temperature limitations.

For A109E helicopter equipped with skid landing gear kit P/N 109-0812-57-101:

Take-off and landing 3 000 ft (914 m)

Maximum operating altitude 15 000 ft (4 572 m)

See approved RFM Section 1 for temperature limitations.

10.2 Temperature Refer to approved RFM

11.	**Operating Limitations**	VFR day and night IFR Non-icing conditions “Equivalent Cat A” operations
12.	**Maximum Mass**	Take -off and landing: 2 850 kg (See Note 1 in this Section)
13.	**Centre of Gravity Range**	Refer to approved RFM for CG envelope
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 835 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 6 for detailed information
15.	**Levelling Means**	The spirit level plate is to be placed on cabin roof right stanchion reference. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	One (1) pilot (right seat)
17.	**Maximum Passenger Seating Capacity**	Normal Category: Seven (7) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin

19.	**Maximum Baggage/ Cargo Loads**	150 kg at STA 5 300 mm or according to load distribution defined in RFM – Section 6 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg
20.	**Rotor Blade Control Movement**	MR (collective): min -2° max +12° TR: RH pedal -7° LH pedal +23° For rigging information refer to Maintenance Manual
21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	Refer to approved A109E Maintenance Planning Manual Chapter 4
23.	**Wheels and Tyres**	360x135-6 tubeless (except for the A109E with skid landing gear installation)

iv. Operating and Service Instructions

1.	**Flight Manual**	For helicopter equipped with PW206C: "A109E Rotorcraft Flight Manual", approved letter N°97/3147/MAE dated 30 July 1997; and later approved revisions. For Helicopters equipped with Arrius 2K1: "A109E Rotorcraft Flight Manual" 109-08-053, approved letter N°03/171337/SPA dated 29 July 2003 and later approved revisions and relevant Section 5 "Optional Equipment Supplements" 109-08-063, EASA approved with letter N°2004-6322 dated 17 June 2004 and later approved revisions. For Helicopters equipped with skid landing gear kit P/N 109-0812-57-101: "A109E Rotorcraft Flight Manual" 109-08-055, approval letter N°120350/SICU dated 1 June 2001 and later approved revisions and relevant Section 5 "Optional Equipment Supplements" 109-08-058, EASA approved N°2004-6322 dated 17 June 2004 and later approved revisions.
2.	**Maintenance Manual**	A109E Maintenance Planning Manual A109E Maintenance Manual
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to the section III.3 above and to approved Rotorcraft Flight manuals and related supplements for the approved mandatory and optional equipment

v. Operational Suitability Data

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

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

TCH doc 109G0270Q018 Issue A, EASA-approved by letter 10056041, or subsequent approved revisions

2. Flight Crew Data

TCH doc 109G0000N174 Issue B, EASA-approved by letter 10065544, or subsequent approved revisions.

3. SIM Data

Reserved

4. Maintenance Certifying Staff Data

Reserved

vi. Notes

1. Weight increase (2 850 kg) in normal category for standard C.N. release A109K2 and A109E: Following the request forwarded with letter 93/09 dated 4 April 1993 (for A109K2) and 97/3.335 dated 2 June 1997 (for A109E); following the approval expressed with letter 96/1429/MAE dated 5 April 1996, as conclusion of certification procedures and relevant RFM revisions, it has been granted the exemption to paragraph 27.1(a) therefore the standard C.N can be obtained in normal category with take-off maximum weight of 2 850 kg (approval letters 97/3166/MAE dated 31 July 1997 for A109K2 and 97/3147/MAE dated 30 July 1997 for A109E).
2. The fuel vented from the injector line at the engine shutdown, is recollected into the main fuel tank, according to the Drawings:

   Model A109E with PW206C: Drawing: 109-0601-49

   Model A109E with Arrius 2K1: Drawing: 109-0602-06
3. To operate at 3 000 kg maximum weight, Model A109E with Pratt & Whitney PW206C engines shall embody kit P/N 109-0823-22-101 according to BT 109EP-67.

   A109E aircraft equipped with skid landing gear installation P/N 109-0812-57-101 are not authorised to operate at a maximum weight over 2 850 kg.
4. Manufacturer’s eligible serial number:

   Assembly drawing 109-9000-01-151 from s/n 11001 to s/n 11999.
5. Designation:AW109E and Power are used as marketing designation for A109E helicopters.
6. The referenced Assembly Drawing 109-9000-01-151 was later replaced by the Type Design Definition document 109G0000X006/06 Rev. A and subsequent revisions.
7. Cabin Interior and Seating Configurations must be approved.

Section 7: A119

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

A119

1.3 Variant

-

2. Airworthiness Category Small Rotorcraft

Small Rotorcraft

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See this “Section 7”, Note 1

See Section 13ii.

5. Type Certification Application Date to RAI

30 December 1996 (See Note 2 in this Section)

6. State of Design Authority

EASA (pre-EASA: RAI/ENAC, Italy)

7. Type Certifcation Date by RAI

30 December 1999 (See Note 2 in this Section)

8. Type Certificate n° by RAI

SO/A 156

9. Type Certificate Data Sheet n° by RAI

SO/A 156

10. 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: 30 December 1996 (See Note 2 in this Section), for OSD elements: 9 December 2014.

2. Airworthiness Requirements

JAR 27 / FAR 27 Amdt. as defined here below. (See Note 2 in this Section)
JAR 27 issue dated 6 September 1993 except the following paragraphs:
- JAR 27.561 replaced by FAR 27.561 Base Amdt.;
- JAR 27.562; JAR 27.785 replaced by FAR 27.2 Amdt. 28 and FAR 27.785 Base Amdt.;
- JAR 27.952; JAR 27.963 replaced by FAR 27.963 Amdt. 23.
- JAR 27.971 replaced by FAR 27.971 Base Amdt.;
- JAR 27.973 replaced by FAR 27.973 Base Amdt.

For cargo hook and rescue hoist:
JAR 27.865 Amdt. 2 dated 1 May 2001

3. Special Conditions

HIRF Protection according to JAA Interim Policy, Paper No. INT/POL/27&29/1 issue date 1 June 1997 for EEC System only (refer to F-01 Stage 2)

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

JAR 27.1322; JAR 27.1509 (a) see Note 2 in this Section.

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

8.1 Noise Requirements

see TCDSN UK.TC.R.00103

8.2 Emissions Requirements

ICAO Annex 16, Vol.II, Ed.1993 (see Note 3 in this Section)

9. Operational Suitability Data (OSD)

9.1 Master Minimum Equipment List (MMEL)

Special Condition SC-CS-GEN-MMEL-H (refer to A-MMEL)

9.2 Flight Crew Data (FCD)

CS-FCD Initial Issue

9.3 Simulation Data (SIMD)

Reserved

9.4 Maintenance Certifying Staff Data (MCSD)

Reserved

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Refer to report 109-00-155 Rev.B and subsequent (See Note 2 and Note 6 in this Section).

2. Description

The A119 differs from A109E model for the installation of a single Pratt & Whitney Canada PT6B-37A turbo engine, controlled by Electronic Engine Control (EEC) (See Note 2 in this Section)

3. Equipment

Basic equipment required by the airworthiness rules (see Certification Basis) shall be installed on the helicopter for the Airworthiness Certificate release.

Besides are required the following equipment:

OAT indicator P/N MS28028-1

Low rotor rpm and engine failure warning system according to drawing N° 109-0729-21 and 109-0729-22.

For helicopters equipped with IDS, the 109-0729-21 is replaced by the 109-0900-66.

For A119 helicopters not equipped with IDS, approved mandatory and optional equipment listed in report 109-07-19 “Elenco degli equipaggiamenti”

For A119 helicopters equipped with IDS, approved mandatory and optional equipment are listed in

report 109G0840W006 “A119 with IDS Helicopter – Chart A – Equipment List”

Refer also to the Equipment list in RFM.

4. Dimensions

4.1	Fuselage	Length: 11.17 m
		Width: 2.88 m
		Height: 3.77 m
4.2	Main Rotor	Diameter: 10.83 m
4.3	Tail Rotor	Diameter: 2.00 m, with metallic TR Blades
		Diameter: 1.94 m, with composite TR blades

5. Engine

5.1 Model

Pratt & Whitney Canada

1 x Model PT6B-37A Build Specification No. 1017 (for A119 helicopters not equipped with IDS), or, Build Specification No. 1142 (for A119 helicopters equipped with IDS)

5.2 Type Certificate

State of Design Engine	TC/TCDS n°:	TCCA E-20
	EASA TC/TCDS n°:	EASA.IM.E.039

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

Installed Engine Limits	
Take-Off (5 minutes)	900 shp, 108.5% (Nr 100%)
Maximum Continuous	830 shp, 142% (Nr 100%)
See approved Rotorcraft Flight Manuals for ITT, N1 and transient	

Transmission Torque Limits
See approved Rotorcraft Flight Manual Section 1

5.3.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6. Fluids

6.1 Fuel

For all temperatures:

ASTM D1655 Type Jet A, ASTM D1655 Type Jet A-1, MIL-T-5624 Type JP-5, MIL-T-83133 Type JP-8 For detailed information refer to approved RFM Section 1

6.2 Oil

Engines:

MIL-PRF-23699 (MIL-L-23699) or PWA-521
Transmission:
DOD-L-85734 or MIL-PRF-23699 (MIL-L-23699)

For detailed information refer to approved RFM Section 1

7. Fluid capacities

7.1 Fuel

Total usable: 595 litres

See RFM for unusable fuel and for fuel capacity when installed auxiliary tanks.

7.2 Oil

Engines: 10.45 litres

Transmission: 10.3 litres

(Refer to RFM for non-drainable lubricant)

8. Air Speed Limitations

V_{NE}: 152 KIAS

Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations

9.	**Rotor Speed Limitations**	Power on (See Note 2 in this Section): Maximum 101 % (388 rpm) Minimum 103% (396 rpm) with torque <50% Power off: Maximum 110 % (422 rpm) Minimum 90% (346 rpm) Refer to approved RFM Section 1 for detailed information
10.	**Maximum Operating Altitude and Temperature** (See Note 2 in this Section)	
10.1	Altitude 15 000 ft (4 572 m)	
10.2	Temperature Refer to approved RFM	
11.	**Operating Limitations**	VFR day and night, non-icing conditions. Additional limitations for TO and LDG refer to approved RFM Section 1
12.	**Maximum Mass**	Take -off and landing: 2 720 kg (See Note 2 in this Section)
13.	**Centre of Gravity Range**	Refer to approved RFM for CG envelope (See Note 2 in this Section)
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 835 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 6 for detailed information
15.	**Levelling Means**	Plumb line from ceiling reference point to the index plate located on passenger compartment floor. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	One (1) pilot (right seat)
17.	**Maximum Passenger Seating Capacity**	Seven (7) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin
19.	**Maximum Baggage/ Cargo Loads**	150 kg at STA 4 880 mm or according to load distribution defined in RFM – Section 6 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg
20.	**Rotor Blade Control Movement**	MR (collective): min -2° max +12° TR:(metallic blades): RH pedal -7° LH pedal +23° TR:m(composite blades): RH pedal -8° LH pedal +24° For rigging information refer to Maintenance Manual

21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	Refer to approved Airworthiness limitations: 19-A-AMPI-00-P, Chapter 04 (See Note 2 in this Section)

iv. Operating and Service Instructions

1.	**Flight Manual**	For aircraft equipped with standard instrument: A119 RFM, approval letter n°99/4812/MAE, dated 30 December 1999 and later approved revisions. For aircraft equipped with Integrated Display System A119 RFM n° 109G0040A006, approval letter n° 03/171218/SPA, dated 23 May 2003 and later approved revisions. (See Note 2 in this Section)
2.	**Maintenance Manual**	A119/AW119MKII-MPM Issue 1 Rev. 0 Maintenance Planning Manual A119/AW119 MKII-MM Issue 1 Rev. 0 Maintenance Manual and subsequent approved (when required) revisions. 19-A-AMPI-00-P ⇨ Chapter 00 (first issue and subs), Chapter 04 (first issue and subs approved), Chapter 05 (first issue and subs) 19-A-AMP-00-X ⇨ Chapters 6 and subs (first issue and subs) (See Note 7 in this Section)
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to the section III.3 above and to approved Rotorcraft Flight manuals and related supplements for the approved mandatory and optional equipment

v. Operational Suitability Data

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

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

TCH doc 109G0270Q015 Issue A, EASA-approved by letter 10056039, or subsequent approved revisions

2. Flight Crew Data

TCH doc 109G0000N175 issue A, EASA approved by letter 10070339, or subsequent approved revisions.

3. SIM Data

Reserved

4. Maintenance Certifying Staff Data

Reserved

vi. Notes

1. Manufacturer:

   from s/n 14003 to s/n 14516: Agusta S.p.A.

   from s/n 14517 to s/n 14700: AgustaWestland Philadelphia Corporation

   3050 Red Lion Road, Philadelphia, PA 19114, USA

2. The A119 Helicopters equipped with IDS (from s/n 14031 to s/n 14700) may be converted into AW119MKII by the application of the retrofit kit P/N 109-0824-09-101, provided that:

   - Composite Tail Rotor Blades P/N 709-0160-48-101 are installed.
   - If not installed, Composite Tail Rotor Blades must be installed by applying the retrofit Kit P/N 109-0823-51-101 (ref. BT119-9).
   - The Engine Air Particle Separator Inst. Kit P/N 109-0812-87-101 is removed (if installed), since not certified for the AW119MKII helicopter.
   - All supplemental installations not certified for the AW119MKII helicopter model are removed. After conversion, refer to AW119MKII for all information, except the following:

I.7.	EASA Application Date:	6 July 2007
	ENAC Recommendation Date:	18 December 2007
I.9.	EASA Type Certification Date:	18 December 2007
II.1.	Reference Date for determining the applicable requirements:	Report 109G0000N084 “A119 – Retrofit Kit for Conversion into AW119MKII helicopter model. Compliance Check List and Certification Program A109 Helicopter: Compliance with Applicable Rules”
III.1.	Type Design Definition:	Refer to Report 109-00-155 Rev. D and subsequent. (See Note 6 in this Section)
III.22.	Life-limited parts:	Refer to approved 19-A-AMPI-00-P Chapter 04 for A119 helicopters converted into AW119MKII

Jointly with the Retrofit Kit P/N 109-0824-09-101, the PT6B-37A engine configuration must be updated to BS 1242 by the application of P&WC SB 39055.

3. The fuel vented from the injector line at the engine shutdown, is recollected into the main fuel tank, according to the Drawing 109-0613-67
4. Manufacturer's eligible serial number:

   Assembly drawing 119-9000-01-107 from s/n 14003 to s/n 14700.

   (See Note 2 above)
5. Designation:AW119 and Koala are used as marketing designation for A119 helicopters.
6. The referenced Type Design Definition document 109-00-155 was later replaced by the Type Design Definition document 109G0000X028 Rev. A and subsequent revisions.
7. Maintenance manuals 19-A-AMPI-00-P and 19-A-AMP-00-X respectively replaced Maintenance manuals A119/AW119MKII-MPM and A119/AW119 MKII-MM, which will no longer be kept updated.
8. Cabin Interior and Seating Configurations must be approved.

Section 8: A109LUH

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

A109LUH

1.3 Variant

-

2. Airworthiness Category Small Rotorcraft

Small Rotorcraft and Equivalent Category A operations

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See Section 13ii.

5. Type Certification Application Date to ENAC

19 March 2002

6. State of Design Authority

EASA

7. EASA Type Certification Date

29 October 2004

ii. Certification Basis

1. Reference Date for determining the applicable requirements.

19 March 2002

2. Airworthiness Requirements

FAR 27 / 29, JAR 27 / 29 Amdt. as defined here below. FAR Part 27 with Amdt. from 1 to 8 included

FAR Part 27 paragraphs: 27.2 Amdt. 28; 27.21 Amdt. 21; 27.45 Amdt. 21; 27.79 Amdt. 21; 27.141 Amdt.21; 27.143 Amdt. 21; 27.401 Amdt. 27; 27.901 Amdt. 23; 27.903 Amdt. 23; 27.927 Amdt. 23; 27.939 Amdt. 11; 27.951 Amdt. 9; 27.954 Amdt. 23; 27.1091 Amdt. 23; 27.1093 Amdt. 20; 27.1321 Amdt. 13; 27.1322 Amdt. 11; 27.1323 Amdt. 13; 27.1325 Amdt. 13; 27.1505 Amdt. 21; 27.1519 Amdt. 21; 27.1521 Amdt. 23; 27.1527 Amdt. 14; 27.1529 Amdt. 18; 27.1549 Amdt. 23; 27.1555 Amdt. 21; 27.1557 Amdt. 11; 27.1581 Amdt. 14; 27.1583 Amdt. 16; 27.1585 Amdt. 21; 27.1587 Amdt. 21;

FAR Part 29 Paragraph 29.903 (b), “Category A; engine isolation”

JAR 27 change 1 Amdt.2, 1 May 2001 for the new or changed parts classified as major significant changes with respect to the A109E with the applicable paragraphs as follows:

27.1	27.339	27.621	27.807	27.977	27.1329 c	27.1559
27.25	27.351	27.625	27.865 a	27.991	27.1329 d	
27.29	27.361	27.629	27.865 b	27.997	27.1329 e	APP.B.1
27.33	27.391	27.663	27.865 c	27.999	27.1337	APP.B.2
27.65	27.395	27.673	27.865 d	27.1019	27.1351	APP.B.3
27.67	27.397	27.674	27.917	27.1027	27.1353	APP.B.4
27.75	27.501	27.675	27.923	27.1141	27.1357	APP.B.5
27.151	27.561*	27.685	27.955	27.1163	27.1365	APP.B.6
27.161	27.563	27.727	27.961	27.1185	27.1401	APP.B.7
27.173	27.571	27.729	27.963	27.1187	27.1415	APP.B.8
27.175	27.602 em.3	27.751	27.965	27.1189	27.1501	APP.B.9
27.177	27.603	27.753	27.967	27.1305	27.1525	
27.307	27.605	27.779	27.969	27.1327	27.1543	
27.321	27.610	27.801	27.971	27.1329 a	27.1545	
27.337	27.613	27.805	27.975	27.1329 b	27.1547	

*only for instrument and overhead panels, central pedestal inst. and adjacent airframe structure.

For “Equivalent Category A” operations as per JAR OPS 3.480 in addition to what listed above is

required the compliance with following paragraphs:

JAR 29.45 (a), (b)(2) Base Amdt., JAR 29.49 (a) Base Amdt., JAR 29.51 Base Amdt., JAR 29.53 Base Amdt., JAR 29.55 Base Amdt., JAR 29.59 Base Amdt., JAR 29.60 Base Amdt., JAR 29.61 Base Amdt., JAR 29.62 Base Amdt., JAR 29.64, Base Amdt., JAR 29.65 (a) Base Amdt., JAR 29.67 (a) Base Amdt., JAR 29.75 Base Amdt., JAR 29.77 Base Amdt., JAR 29.79 Base Amdt., JAR 29.81 Base Amdt., JAR 29.85 Base Amdt.,JAR 29.87 (a) Base Amdt., JAR 29.571 Base Amdt. (AC Material only: AC 29-2B Paragraph 230A.b(2)),JAR 29.861 (a) Base Amdt., JAR 29.901 (c) Base Amdt., JAR 29.903 (b), (c), (e) Base Amdt., JAR 29.908 (a) Base Amdt., JAR 29.927 (c)(1) Base Amdt., JAR 29.953 (a) Base Amdt., JAR 29.1027 (a) Base Amdt., JAR 29.1045 (a)(1), (b), (c), (d), (f) Base Amdt., JAR 29.1047 (a) Base Amdt., JAR 29.1181 (a) Base Amdt., JAR 29.1187 (e) Base Amdt., JAR 29.1189 (c) Base Amdt., JAR 29.1191 (a)(1) Base Amdt., JAR 29.1193 (e) Base Amdt., JAR 29.1195 (a), (d) Base Amdt., JAR 29.1197 Base Amdt., JAR 29.1199 Base Amdt., JAR 29.1201 Base Amdt., JAR 29.1305 (a)(6), (b) Base Amdt., JAR 29.1309 (b)(2)(i), (d) Base Amdt., JAR 29.1323 (c)(1) Base Amdt., JAR 29.1331 (b) Base Amdt., JAR 29.1351 (d)(2) Base Amdt., JAR 29.1587 (a) Base Amdt.

3. Special Conditions

HIRF: N°94/253/MAV dated 04/05/1994 for HIRF for basic helicopter.

Interim Policy in the Administrative and Guidance Material, Section 3, Part 3 under Policy Paper Number INT/POL/27&29/1 Issue 2, for the new avionics

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

Power Index JAR 27.1305 (refer to F-05)

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

8.1 Noise Requirements

see TCDSN UK.TC.R.00103

8.2 Emissions Requirements

ICAO Annex 16, Vol.II, Ed.1993 (see Note 3 in this Section)

9. Operational Suitability Data

Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Refer to Drawing 109G0000X002 Rev. F, dated 14 January 2005 and subsequent approved revisions.

2. Description

Normal Category and “Equivalent Cat A” operations. Light twin-engine helicopter, four (4) blades articulated main rotor, twin (2) blades teetering tail rotor, tricycle retractable landing gears, two pilots and six passengers’ capacity.

The A109LUH differs from A109E model for the installation of Safran Arrius 2K2 turbo engines, controlled through FADEC, for the new cockpit, for the new avionic equipment configuration and 4-axis autopilot, fuel tanks and fuel quantity gauging system, main rotor group, engine and transmission oil cooling system, airframe modifications to improve cockpit accessibility.

3. Equipment

Basic equipment required by the Airworthiness Specifications (see Certification Basis) shall be installed on the helicopter for Airworthiness Certificate release.

In addition, the following equipment is required:

Data relevant to outside temperature, provided from CHS and external probe identified by P/N E22307-1-1.

Low rotor RPM and engine failure warning system according to drawing N° SC628P.

Approved mandatory and optional equipment are listed in Report 109G0840W011 “A109LUH Helicopter

Chart A – Equipment list”.

Refer also to the Equipment list in the RFM

4. Dimensions

4.1 Fuselage Length: 11.43 m

Width: 2.88 m

Height: 3.42 m

4.2 Main Rotor Diameter: 10.83 m

4.3 Tail Rotor Diameter: 2.00 m

5. Engine

5.1 Model

Safran Helicopter Engines (former:Turbomeca)

2 x Model Arrius 2K2

5.2 Type Certificate

State of Design Engine TC/TCDS n°: DGAC M20

EASA TC/TCDS n°: EASA.E.029

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

INSTALLED ENGINE LIMITS		
AEO	Maximum Continuous	450 shp 100% TQ (100% NR)
	Take-Off Power	450 shp 100% TQ (100% NR)
	Transient (6 sec)	495 shp 110% TQ (100% NR)
OEI	(Emergency) Maximum Continuous	560 shp 124% TQ (100% NR)
	(Emergency) 2.5 minutes	640 shp 142% (100% NR)
	(Emergency) Transient (6 sec)	700 shp, 156% (100% NR)
See approved Rotorcraft Flight Manual for ITT, Ng		

TRANSMISSION TORQUE LIMITS		
AEO	Maximum Continuous	900 shp 100% TQ (100% NR)
	Take-Off Power	900 shp 100% TQ (100% NR)
	Transient (6 sec)	990 shp 110% TQ (100% NR)
OEI	(Emergency) Maximum Continuous	560 shp 124% TQ (100% NR)
	(Emergency) 2.5 minutes	640 shp 142% (100% NR)
	(Emergency) Transient (6 sec)	700 shp,156% (100% NR)
See approved Rotorcraft Flight Manual Section 1		

5.3.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6. Fluids

6.1	Fuel	For all temperatures: ASTM D-1655 Jet A ASTM D-1655-82 Jet A1 MIL-T-83133 JP-8. For detailed information refer to approved RFM Section 1
6.2	Oil	Engines: Engine oil applicable specifications: MIL-PRF-23699 (MIL-L-23699), DEF STAN 91-101 (DERD 2499), MIL-PRF-7808 (MIL-L-7808), AIR 3514, DEF STAN 91-94 Transmission: Transmission oil applicable specifications: MIL-PRF-23699 (MIL-L-23699), DOD-L-85734 For detailed information refer to approved RFM Section 1

7. Fluid capacities

7.1	Fuel	Total usable: 599 litres See RFM for unusable fuel
7.2	Oil	Engines (TM2K2): 4.3 litres for each engine, (refer to RFM for non-drainable lubricant) Transmission: 11.7 litres (Refer to RFM for non-drainable lubricant)

8. Air Speed Limitations

V_{NE}: 168 KIAS Power on

V_{NE}: 120 KIAS Power off

Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations

9. Rotor Speed Limitations

Power on (AEO):

Maximum Continuous 102%

Minimum 99%

Take -off and landing 103%

Power off:

Maximum 110%

Minimum 95%

Refer to approved RFM Section 1 for detailed information

10. Maximum Operating Altitude and Temperature

10.1 Altitude Maximum operating altitude 20 000 ft (6 096 m)

See approved RFM Section 1 for take-off and landing altitude and for temperature limitations.

10.2 Temperature Refer to approved RFM

11.	**Operating Limitations**	VFR day and night IFR Non-icing conditions “Equivalent Cat A” operations day and night VFR in non-icing conditions
12.	**Maximum Mass**	3 000 kg
13.	**Centre of Gravity Range**	Refer to approved RFM for CG envelope
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 835 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 6 for detailed information
15.	**Levelling Means**	The spirit level plate is to be placed on cabin roof right stanchion reference. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	VFR day operations: One (1) pilot (right seat) VFR night operations: Two (2) pilots IFR operations: Two (2) pilots
17.	**Maximum Passenger Seating Capacity**	Seven (7) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin
19.	**Maximum Baggage/ Cargo Loads**	50 kg according to load distribution defined in RFM – Section 6 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg
20.	**Rotor Blade Control Movement**	MR (collective): min -1° max +12° TR: RH pedal -7° LH pedal +24° For rigging information refer to Maintenance Manual
21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	Refer to approved Airworthiness limitations: Chapter 4 (Section 09-A-04) of the doc n° 09-A/AMP-00-P Issue 2 dated 31-12-04 and subsequent approved revisions.
23.	**Wheels and Tyres**	n/a

iv. Operating and Service Instructions

1.	**Flight Manual**	109G0040A009 Issue 1 rev 1 and later approved revisions.
2.	**Maintenance Manual**	09-A/AMP-00-P Issue 2 and subsequent approved revisions
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to the section III.3 above and to approved Rotorcraft Flight Manuals and related supplements for the approved mandatory and optional equipment

v. Operational Suitability Data

See Section 8, ii., item 9.

vi. Notes

1. The fuel vented from the injector line at the engine shutdown, is recollected into the main fuel tank, according to the Drawing 109-0602-06
2. Manufacturer’s eligible serial number:

   Assembly drawing 119-9000-08-203 from s/n 13751 to s/n 13800.
3. Designation:AW109LUH is used as marketing designation for A109LUH helicopters
4. Cabin Interior and Seating Configurations must be approved.

Section 9: A109S

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

A109S

1.3 Variant

-

2. Airworthiness Category Small Rotorcraft

Small Rotorcraft, Category A

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See Section 13ii.

5. Type Certification Application Date to ENAC

11 December 2001

6. State of Design Authority

EASA

7. EASA Type Certification Date

1 June 2005

ii. Certification Basis

1. Reference Date for determining the applicable requirements.

For Airworthiness and Environmental Protection:31 May 2002, for OSD elements: 17 February 2014.

2. Airworthiness Requirements

FAR 27 / 29, JAR 27 / 29 Amdt. as defined here below.:

FAR 27 as quoted in the EASA TCDS R.005 for unchanged areas and JAR 27 Amdt. 3, 1 April 2002, for the new or changed parts with respect to the A109E (identified in document n° 109-01-182 rev B), with the exceptions of JAR 27.863.

For Category A Operations Appendix C to JAR 27 Amdt. 3.

For helicopters equipped with Trekker kit P/N 109G0000F01-101:

A109S helicopters certification basis for unchanged areas and CS-27 Amdt. 3, 11 December 2012 for the new or changed parts.

For helicopters equipped with Trekker kit P/N 109G0000F01-201:

Same as for helicopters equipped with Trekker kit P/N 109G0000F01-101 with in addition CS 27.1317 at Amdt. 4 for the AFCS components in lieu of HIRF Special condition n° INT/POL/27&29/1 Issue 3.

3. Special Conditions

HIRF: Special condition n° 94/253/MAV dated 4 May 1994 (as for A109E model)

HIRF: Special condition n° INT/POL/27&29/1 Issue 3, dated 01/10/2003 for A109S equipped with Trekker kit P/N 109G0000F01-101/-201 (AFCS components excluded) and applicable for new avionics equipment reported in F-01, Issue 2

4. Exemptions

n/a

5. Deviations

None.

6. Equivalent Safety Findings

Power Index Indicator (refer to F-03, Issue 3) for A109S with Trekker kit P/N 109G0000F01/101/-201

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

8.1 Noise Requirements

see TCDSN UK.TC.R.00103

8.2 Emissions Requirements

ICAO Annex 16, Vol.II, Ed.1993 Vol II, Part II Chapt.2 (see Note 1 in this Section)

9. Operational Suitability Data (OSD)

9.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1 (refer to A-MMEL)

9.2 Flight Crew Data (FCD)

Until and including 16 May 2018: Commission Regulation (EU) N.748/2012 and 69/2014 for Flight Crew Data / Common Procedures Document for conducting Operational Evaluation Board; From 17 May 2018: CS-FCD Initial Issue

9.3 Simulation Data (SIMD)

Reserved

9.4 Maintenance Certifying Staff Data (MCSD)

Reserved

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Refer to Drawing 109G0000X006/07 Rev. G, and subsequent approved revisions.

2. Description

Normal Category and “Category A” operations.

Light twin-engine helicopter, four (4) blades articulated main rotor, twin (2) blades teetering tail rotor, tricycle retractable landing gears, one / two pilots and six / seven passengers’ capacity.

The A109S differs from A109E model for the installation of Pratt & Whitney Canada PW207C engines, controlled through FADEC, passengers and pilots crash resistant seats and fuel tanks and fuel quantity gauging system crash resistant, main rotor group, engine and transmission oil cooling system, and airframe modifications to improve cockpit accessibility.

3. Equipment

Basic equipment required by the Airworthiness Specifications (see Certification Basis) shall be installed on the helicopter for Airworthiness Certificate release.

For A109S not equipped with Trekker kit P/N 109G0000F01-101/-201:

In addition to basic equipment, the following equipment are required:

- Data relevant to outside temperature, provided from IDS and external probe identified by P/N E22307-2-4;
- Low rotor rpm and engine failure warning according to drawing N° 109-0753-28.

For Category A operations the following equipment are required (ref 109-0823-98-101):

- Engine Fire Extinguisher 109-0811-39;
- EDU 109-0900-76-2A01;
- DAU 109-0900-76-6A01;
- AWG 109-0729-96-105;
- Cat A Electrical kit 109-0823-96;
- Searchlight 109-0811-46 (for night operations);
- Additional Altimeter 109-0814-93;
- Additional Magnetic Compass 109-0814-94.

Approved mandatory and optional equipment are listed in the Report 109G0840W017 “A109S

Helicopter – Chart A Equipment list”.

For A109S equipped with Trekker kit P/N 109G0000F01-101/-201:

In addition to basic equipment, the following equipment are required:

For Category A operations with A109S equipped with Trekker kit P/N 109G0000F01-101/-201:

- Engine Fire Extinguisher 109-0811-39.

For A109S equipped with Trekker kit P/N 109G0000F01-101:

Approved mandatory and optional equipment are listed in the Report 109G0840W048 “A109S Trekker Chart A Equipment list”.

For A109S equipped with Trekker kit P/N 109G0000F01-201:

Approved mandatory and optional equipment are listed in the Report 109G0840W051 “A109S

Trekker Garmin AFCS - Chart A Equipment list”.

Refer also to the Equipment list in RFMs

4. Dimensions

4.1 Fuselage Length: 11.65 m

Width: 3.29 m

Height: 3.40 m

For A109S with Trekker kit P/N 109G0000F01-101/-201:

Height: 3.53 m

4.2 Main Rotor Diameter: 10.83 m

4.3 Tail Rotor Diameter: 1.94 m

5. Engine

5.1 Model

Pratt & Whitney Canada

2 x Model PW207C

5.2 Type Certificate

State of Design Engine TC/TCDS n°: TCCA E-23

EASA TC/TCDS n°: EASA.IM.E.017

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

INSTALLED ENGINE LIMITS (Thermodynamics / Mechanical Power)			
AEO		Take-Off Power (5 minutes)	735 shp / 572 shp (102% NR)
		Maximum Continuous	625 shp / 572 shp (102% NR)
OEI	(Emergency)	2.5 min	815 shp / 745 shp (102% NR)
	(Emergency)	Maximum Continuous	735 shp / 646 shp (102% NR)
See approved Rotorcraft Flight Manuals for TOT, N1			

TRANSMISSION TORQUE LIMITS			
AEO		Take-Off Power (5 minutes)	960 shp 107% TQ (100% NR)
		Maximum Continuous	900 shp 100% TQ (100% NR)
		Transient (6 sec)	990 shp 110% TQ (100% NR)
OEI	(Emergency)	2.5 min	730 shp 162% TQ (100% NR)
	(Emergency)	Maximum Continuous	600 shp 133% TQ (100% NR)
	(Emergency)	Transient (6 sec)	780 shp 173% TQ (100% NR)
See approved Rotorcraft Flight Manuals Section 1 for additional detailed information			

5.3.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6. Fluids

6.1	Fuel	For all temperatures: ASTM D-1655 Jet A, ASTM D-1655-82 Jet A1, MIL-T-5624 JP-5, MIL-T-83133 JP-8 For detailed information refer to approved RFMs Section 1
6.2	Oil	Engines: MIL-PRF-23699 (MIL-L-23699) Transmission: MIL-PRF-23699 (MIL-L-23699), DOD-PRF-85734 For detailed information refer to approved RFM Section 1

7. Fluid capacities

7.1	Fuel	Total usable: 563 litres See RFM for unusable fuel
7.2	Oil	Engines 5.12 litres for each engine Transmission: 11.0 litres (Refer to RFM for non-drainable lubricant)

8.	**Air Speed Limitations**	V_{NE}: 168 KIAS Power on V_{NE}: 128 KIAS Power off For A109S with Trekker kit P/N109G0000F01-101/-201: $V_{NE:}$ 160 KIAS Power on $V_{NE:}$ 120 KIAS Power off Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations
9.	**Rotor Speed Limitations**	Power on (AEO): Maximum Continuous 101% Minimum 99% Take -off and landing 102% Power off: Maximum 110% Minimum 95% Refer to approved RFM Section 1 for detailed information

10. Maximum Operating Altitude and Temperature

10.1 Altitude 20 000 ft (6 096 m) Hp

10.2 Temperature Refer to approved RFMs – Section 1 for Take-off and landing altitude and for temperatures linmitations

11.	**Operating Limitations**	VFR day and night IFR Non-icing conditions Category A operations
12.	**Maximum Mass**	3 175 kg
13.	**Centre of Gravity Range**	Refer to approved RFM Section 1 for CG envelope
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 635 mm forward of the front jack point. For A109S with Trekker kit P/N 109G0000F01-101/-201: Longitudinal: the datum line (STA 0) is located at 1 580 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 6 for detailed information
15.	**Levelling Means**	The spirit level plate is to be placed on cabin roof right stanchion reference. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	One (1) pilot (right seat)
17.	**Maximum Passenger Seating Capacity**	Seven (7) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin
19.	**Maximum Baggage/ Cargo Loads**	120 kg according to load distribution defined in RFM – Section 6 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg
20.	**Rotor Blade Control Movement**	MR (collective): min -1°24’ max +12° TR: RH pedal -7° LH pedal +24° For rigging information refer to Maintenance Manual
21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	Refer to approved Airworthiness Limitations: 0B-A-AMPI-00-P, Chapter 04. For A109S with trekker kit P/N 109G0000F01-101/-201: Refer to approved Airworthiness Limitations:0B-D-AMPI-00-P, Chapter 04.
23.	**Wheels and Tyres**	360x135-6 tubeless For A109S with Trekker kit P/N 109G0000F01-101/-201: n/a

iv. Operating and Service Instructions

1.	**Flight Manual**	109G0040A013 Issue 1 rev 3 and later approved revisions OES 109G0040A014 Issue 1 rev 3 and later approved revisions 109G0040A034 Issue 1 and later approved revisions for A109S equipped with trekker kit P/N 109G0000F01-101 109G0040A035 Issue 1 and later approved revisions for A109S equipped with Trekker kit P/N 109G0000F01-201 (for NVIS operations, as per Note 4 in this Section, refer to Supplement n. 20)
2.	**Maintenance Manual**	For A109S without Trekker kit P/N 109G0000F01-101/-201 0B-A-AMPI-00-P ⇨ Chapter 00 (first issue and subs), Chapter 04 (third issue and subs approved), Chapter 05 (first issue and subs) For A109S with Trekker kit P/N 109G0000F01-101/-201: 0B-D-AMPI-00-P ⇨ Chapter 00 (first issue and subs), Chapter 04 (fourth issue and subs approved), Chapter 05 (first issue and subs) 0B-A-AMP-00-X ⇨ Chapters 6 and subs (first issue and subs)
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to the section III.3 above and to approved Rotorcraft Flight Manuals and related supplements for the approved mandatory and optional equipment

v. Operational Suitability Data

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

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

For Model A109S:

TCH doc 109G0270Q014/02 Issue D, EASA-approved by letter 10056041, or subsequent approved revisions

For Model A109S equipped with Trekker kit P/N 109G0000F01-101/-201:

TCH doc 109G0270Q014/02 Issue E, EASA-approved by letter 10065544, or subsequent approved revisions

2. Flight Crew Data

TCH doc 109G0000N174 Issue B, EASA-approved by letter 10065544, or subsequent approved revisions.

3. SIM Data

Reserved

4. Maintenance Certifying Staff Data

Reserved

vi. Notes

1. The fuel vented from the injector line at the engine shutdown, is recollected into the main fuel tank, according to the Drawing 109-0601-49
2. Manufacturer's eligible serial number:

   Assembly drawing 109-9000-09-101/-103 (ref Type Design 109G0000X006/07) s/n 22001, 22003 through 22087, 22089 through 22200;

   For helicopters equipped with Trekker kit P/N 109G0000F01-101 (3-Axis AFCS): s/n 22002, 22701 through 22741.

   For helicopters equipped with Trekker kit P/N 109G0000F01-201 (4-Axis AFCS): s/n 22088, 22742 through 22999.
3. Designation: AW109S and Grand are used as marketing designation for A109S helicopters not equipped with Trekker kit P/N 109G0000F01-101/-201.
4. NVIS kit P/N 109G3360F02 or P/N 109G3360F03, as per RFM 109G0040A034 or 109G0040A035 Supplement n. 20, allows NVIS Operations for helicopters equipped with Trekker kit P/N 109G0000F01- 101/-201. Modifications that add or change systems that emit or reflect light, have the potential to alter or change the NVIS lighting-NVG compatibility. For this reason, they require an engineering evaluation that must be approved by the aircraft certification authority. Subsequent modifications and deviations to the NVG helicopter configuration shall be managed in accordance with document 109G3360E004 "109S Trekker Helicopter NVG Policy". The aircraft configuration involving internal/external emitting/reflecting equipment approved for use with NVG is described in the Report 109G3360A005 "A109S Trekker NVG compatibility Reference Handbook".
5. 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 109G9850A002 "A109S Trekker - PED Compatibility Reference Handbook".
6. A109S helicopter equipped with Trekker Kit P/N 109G0000F01-201 (4-Axis AFCS) and IFR Kit P/N 109G2510F02-201 has been demonstrated to be compliant with Certification Specifications for Airborne Communications Navigation and Surveillance, CS-ACNS Issue 4, Subpart C, dated 5 April 2022 (for details see the RFM 109G0040A035 Supplement 18 – PBN/FMS Approved Operations).
7. A109S Trekker, AW109 Trekker and Trekker are used as marketing designation for A109S helicopters equipped with Trekker kit P/N 109G0000F01-101/201.
8. Cabin Interior and Seating Configurations must be approved.

Section 10 : AW119MKII

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

AW119MKII

1.3 Variant

-

2. Airworthiness Category Small Rotorcraft

Small Rotorcraft

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See Section 13ii.

5. Type Certification Application Date

4 August 2006

6. State of Design Authority

EASA

7. EASA Type Certification Date

11 June 2007

ii. Certification Basis

1. Reference Date for determining the applicable requirements.

4 August 2006, for OSD elements: 9 December 2014.

2. Airworthiness Requirements

CS-27 / JAR 27 / FAR 27 Amdt. as defined here below.

For all the affected areas, systems, parts or appliances, the following paragraphs of the CS-27 Amdt. /, dated 14 November 2003 apply:

CS 27.1; JAR 27.2 b)2)i); CS 27.25; CS 27.351; CS 27.397; CS 27.602; CS 27.610; CS 27.805; CS 27.865;

CS 27.1529; CS Appendix A.

For all the unchanged areas, systems, parts or appliances, JAR 27 Small rotorcraft Issue 1, dated 6 September 1993 apply, except the following paragraphs:

- JAR 27.561 replaced by FAR 27.561 Base Amdt.;
- JAR 27.562;
- JAR 27.785 replaced by FAR 27.2 Amdt. 28 and FAR 27.785 Base Amdt.;
- JAR 27.952;
- JAR 27.963 replaced by FAR 27.963 Amdt. 23;
- JAR 27.971 replaced by FAR 27.971 Base Amdt.;
- JAR 27.973 replaced by FAR 27.973 Base Amdt.

For Pilot and Copilot Crashworthy Seats installation kit P/N 109G2510F04 and for Passenger Crashworthy Seats Installation kit P/N 109G2520F45 (ref. Note 6), the following paragraphs of the CS-27 Amdt. 6, dated 17 December 2018 apply:

CS 27.561; CS 27.562; CS 27.625; CS 27.785.

3. Special Conditions

HIRF Protection according to JAA Interim Policy, Paper No. INT/POL/27&29/1 Issue date 1 June 1997 for EEC System only.

HIRF Protection according to JAA Interim Policy, Paper No. INT/POL/27&29/1 Issue 3 dated 1 October 2003 for helicopters equipped with kit 109G4600F01-101 “G1000H installation kit” and kit 109G4600F01-201 “G1000H NXi installation kit” (refer to F-01, Issue 6).

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

Power Index Indicator (refer to F-03, Issue 3) for helicopters equipped with kit 109G4600F01-201 “G1000H NXi installation kit”.

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

8.1 Noise Requirements

see TCDSN UK.TC.R.00103

8.2 Emissions Requirements

ICAO Annex 16, Ed.1993, Vol II, Part II, Chapter 2 (see Note 1 in this Section)

9. Operational Suitability Data (OSD)

9.1 Master Minimum Equipment List (MMEL)

Special Condition SC-CS-GEN-MMEL-H (refer to A-MMEL)

9.2 Flight Crew Data (FCD)

CS-FCD Initial Issue

9.3 Simulation Data (SIMD)

Reserved

9.4 Maintenance Certifying Staff Data (MCSD)

Reserved

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Refer to Type Design Definition 109G0000X016 Rev. A, and subsequent

2. Description

Single engine rotorcraft controlled by Electronic Engine Control (EEC), four (4) composite MR blades, articulated (with elastomeric bearings) main rotor, twin (2) composite blade teetering tail rotor, skid landing gear, one (1) pilot and seven (7) passengers' capacity.

3. Equipment

Basic equipment required by the airworthiness rules (see Certification Basis) shall be installed on the helicopter for the Airworthiness Certificate release.

Besides, the following equipment are required:

- Data relevant to outside air temperature, provided by IDS and external probe P/N E22307-2-4

Approved mandatory and optional equipment are listed in the report 109G0840W030 "AW119MKII Chart A – Equipment List" and in the report 109G0840W046 for AW119MkII helicopters equipped with kit 109G4600F01-101 "G1000H Installation kit" and kit 109G4600F01-201 "G1000H NXi installation kit".

Refer also to the Equipment list in RFM.

4. Dimensions

4.1 Fuselage Length: 11.14 m

Width: 2.88 m

Height: 3.60 m

4.2 Main Rotor Diameter: 10.83 m

4.3 Tail Rotor Diameter: 1.94 m

5. Engine

5.1 Model

Pratt & Whitney Canada

1 x Model PT6B-37A

Build Specification No. 1242

5.2 Type Certificate

State of Design Engine TC/TCDS n°: TCCA E-20

EASA TC/TCDS n°: EASA.IM.E.039

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

INSTALLED ENGINE LIMITS	
Take-Off (5 minutes)	917 shp, 108.5% TQ (102% NR)
Maximum Continuous	847 shp, 100% TQ (100% NR)
See approved Rotorcraft Flight Manuals for ITT and N1 limits	

TRANSMISSION TORQUE LIMITS	
Take-Off (5 minutes)	917 shp, 108.5% TQ (102% NR)
Maximum Continuous	900 shp, 106.5% TQ (102% NR)
See approved Rotorcraft Flight Manuals Section 1	

5.3.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6. Fluids

6.1 Fuel

For all temperatures:

ASTM D1655 Jet A, ASTM D1655 Jet A1, MIL-T-5624 Type JP-5, MIL-T-83133 Type JP-8.

For detailed information refer to approved RFM Section 1

6.2 Oil

Engines:

MIL-PRF-23699 or PWA-521

Transmission: MIL-PRF-23699 or DOD-L-85734

For detailed information refer to approved RFM Section 1

7. Fluid capacities

7.1 Fuel

Total usable: 595 litres

Refer to RFM for unusable fuel and for fuel capacity when installed auxiliary tanks.

7.2 Oil

Engines: 10.45 litres

Transmission: 10.3 litres

(Refer to approved RFM Section 6 for non-drainable lubricant)

8. Air Speed Limitations

V_{NE}: 152 KIAS

Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations

9.	**Rotor Speed Limitations**	Power on: Maximum 103% (396 rpm) Minimum 95% (365 rpm) Power off: Maximum 110% (422 rpm) Minimum 90% (346 rpm) Refer to approved RFM Section 1 for detailed information

10. Maximum Operating Altitude and Temperature

10.1 Altitude 15 000 ft (4 572 m) Hp

For AW119MkII helicopters equipped with:

- kit 109G4600F01-101 "G1000H Installation kit" and kit 109G0200F01; or,
- kit 109G4600F01-201 “G1000H NXi installation kit”

and kit 109G0200F01;

24 000 ft (7 315 m) Hp or 25 000 ft (7 620 m) whichever comes first.

10.2 Temperature Refer to approved RFM Section 1 for OAT limitations

11.	**Operating Limitations**	VFR day and night, non-icing conditions. Additional limitations for TO and LDG refer to approved RFM Section 1
12.	**Maximum Mass**	2 850 kg
13.	**Centre of Gravity Range**	Refer to approved RFM for CG envelope
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 785 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 6 for detailed information
15.	**Levelling Means**	Plumb line from ceiling reference point to the index plate located on passenger’s compartment floor or the spirit level plate is to be placed on cabin roof right stanchion reference. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	One (1) pilot (right seat)
17.	**Maximum Passenger Seating Capacity**	Seven (7) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin
19.	**Maximum Baggage/ Cargo Loads**	150 kg at STA 4 880 mm or according to load distribution defined in RFM – Section 6 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg

20.	**Rotor Blade Control Movement**	MR (collective): min -2° max +12° TR: RH pedal -8° LH pedal +24° For rigging information refer to Maintenance Manual
21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	Refer to approved Airworthiness limitations: 19-A-AMPI-00-P, Chapter 04

iv. Operating and Service Instructions

1.	**Flight Manual**	109G0040A017 Issue 1 Rev. –, approval letter n° EASA D(2007)CPRO/MMA/52311 dated 11 June 2007, and later approved revisions. 109G0040A033 Issue 1 Rev.- (see Note 2 in this Section) approval letters n°10054263 and 10054264, dated 30 July 2015, and later approved revisions (for NVIS operations, as per Note 5 in this Section, refer to Supplement n. 24)
2.	**Maintenance Manual**	A119/AW119MKII-MPM Issue 1 Rev. 0 Maintenance Planning Manual A119/AW119 MKII-MM Issue 1 Rev. 0 Maintenance Manual and subsequent approved (when required) revisions. 19-A-AMPI-00-P ⇨ Chapter 00 (first issue and subs), Chapter 04 (first issue and subs approved), Chapter 05 (first issue and subs) 19-A-AMP-00-X ⇨ Chapters 6 and subs (first issue and subs) (See Note 7 in this Section)
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to the section III.3 above and to approved Rotorcraft Flight Manuals and related supplements for the approved mandatory and optional equipment.

v. Operational Suitability Data

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

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

TCH doc 109G0270Q015 Issue A, EASA-approved by letter10056039, or subsequent approved revisions

2. Flight Crew Data

TCH doc 109G0000N175 issue A, EASA approved by letter 10070339, or subsequent approved revisions.

3. SIM Data

Reserved

4. Maintenance Certifying Staff Data

Reserved

vi. Notes

1. The fuel vented from the injector line at the engine shutdown, is recollected into the main fuel tank, according to the Drawing 109-0613-67
2. Rotorcraft Flight Manual:

   RFM 109G0040A017 is applicable to the AW119MKII.

   RFM 109G0040A033 is applicable to the AW119MKII helicopters equipped with kit 109G4600F01-101 "G1000H Installation kit" and kit 109G4600F01-201 “G1000H NXi installation kit”.
3. Manufacturer’s eligible serial number:

   Manufacturer's eligible serial numbers:

   Assembly drawing 119-9000-01-111 from s/n 14701 to s/n 15999.

   Helicopters from s/n 14901 to 15999 are equipped with kit 109G4600F01-101 ‘G1000H Installation kit’ or with kit 109G4600F01-201 ‘G1000H NXi installation kit’.

   From s/n 14701 to s/n 15499 (excluding s/n 15015, s/n 15016, s/n 15019, s/n 15023) and from s/n 15800 to s/n 15999 - manufactured in USA see Section 13ii..

   From s/n 15500 to s/n 15799 (and including s/n 15015, s/n 15016, s/n 15019, s/n 15023) – manufactured in ITALY see Section 13ii..
4. AW119Ke and Koala enhanced are used as marketing designation for AW119MKII helicopters. AW119Kx is used as marketing designation for AW119MkII helicopters equipped with kit 109G4600F01-101 "G1000H Installation kit" and kit 109G4600F01-201 “G1000H NXi installation kit”.
5. Kit P/N 109G3360F01-101, as per RFM 109G0040A033 Supplement n. 24 allows NVIS Operations. Modifications that add or change systems that emit or reflect light, have the potential to alter or change the NVIS lighting-NVG compatibility. For this reason, they require an engineering evaluation that must be approved by the aircraft certification authority.

   Subsequent modifications and deviations to the NVG helicopter configuration shall be managed in accordance with document 109G3360E005 revision A “AW119MKII G1000NXi Helicopter NVG Policy”. The aircraft configuration involving internal/external emitting/reflecting equipment approved for use with NVG is described in the Report 109G3360A003 revision A “AW119MKII G1000NXi NVG Compatibility Reference Handbook”.
6. Pilot and Copilot Crashworthy Seats installation kit P/N 109G2510F04 and Passenger Crashworthy Seats Installation kit P/N 109G2520F45 are eligible for installation on helicopters from s/n 15001 and subs.
7. Maintenance Manuals 19-A-AMPI-00-P and 19-A-AMP-00-X respectively replaced Maintenance Manuals A119/AW119MKII-MPM and A119/AW119 MKII-MM, which will no longer be kept updated.
8. Cabin Interior and Seating Configurations must be approved.

Section 11 : AW109SP

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

AW109SP

1.3 Variant

-

2. Airworthiness Category Small Rotorcraft

Small Rotorcraft, Category A

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See Section 13ii.

5. Type Certification Application Date

10 October 2007

6. State of Design Authority

EASA

7. EASA Type Certification Date

25 May 2009

ii. Certification Basis

1. Reference Date for determining the applicable requirements.

10 October 2007, for OSD elements: 17 February 2014.

2. Airworthiness Requirements

FAR 27 / JAR 27 / CS-27 Amdt. as defined here below.

FAR 27 / JAR 27 as quoted in the EASA TCDS R.005 Issue 8 for unchanged/unaffected areas, systems, parts or appliances and CS-27 Amdt./ dated 14 November 2003 for the new or changed/affected areas, systems, parts or appliances with respect to the A109S (ref documents n° 109G0000N062 Rev A and n° 109G0000N091 Rev B).

The paragraph CS 27.863 is not applicable based on Part 21.A.101(b)(2) and (3).

For IFR Operation: Appendix B to CS-27 Amdt./

For Category A Operations: Appendix C to CS-27 Amdt./.

3. Special Conditions

HIRF ⇨ INT/POL/27&29/1 Issue 3 (2003) – Protection from the effects of HIRF – Interim Policy in the Administrative and Guidance Material, Section 3, Part 3 High Intensity Radiated Fields.

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

None.

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

8.1 Noise Requirements

see TCDSN UK.TC.R.00103

8.2 Emissions Requirements

ICAO Annex 16, Ed.1993, Vol II, Part II, Chapter 2 (fuel venting) (see Note 1 in this Section)

9. Operational Suitability Data (OSD)

9.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1 (refer to A-MMEL)

9.2 Flight Crew Data (FCD)

Until and including 16 May 2018: Commission Regulation (EU) N.748/2012 and 69/2014 for Flight Crew Data / Common Procedures Document for conducting Operational Evaluation Board; From 17 May 2018: CS-FCD Initial Issue

9.3 Simulation Data (SIMD)

Reserved

9.4 Maintenance Certifying Staff Data (MCSD)

Reserved

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Type Design Definition 109G0000X006/09 Rev. U and subsequent approved revisions

2. Description

Light twin-engine helicopter, four (4) blades articulated main rotor, twin (2) blades teetering tail rotor, tricycle retractable landing gears, one/two pilots and six/seven passengers' capacity.

The AW109SP differs from A109S model for a new hybrid Metal-Composite fuselage structure, a four-channel digital autopilot and a new cockpit layout with 4 displays (EFIS).

3. Equipment

Basic equipment required by the Airworthiness Specifications (see Certification Basis) shall be installed on the helicopter for Airworthiness Certificate release. Refer also to the Equipment list in RFM

Refer also to the Equipment list in RFM.

4. Dimensions

4.1 Fuselage Length: 11.66 m

Width: 3.29 m

Height: 3.40 m

4.2 Main Rotor Diameter: 10.83 m

4.3 Tail Rotor Diameter: 1.94 m

5. Engine

5.1 Model

Pratt & Whitney Canada

2 x Model PW207C

5.2 Type Certificate

State of Design Engine — TC/TCDS n°: TC-E-23 Issue 21 dated 16/03/05 issued by DOT Canada

EASA TC/TCDS n°: IM.E.017 Issue 1, dated May 10, 2005

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

INSTALLED ENGINE LIMITS (Thermodynamics / Mechanical Power)			
AEO		Take-Off Power (5 minutes)	735 shp / 572 shp (102% NR)
		Maximum Continuous	625 shp / 572 shp (102% NR)
OEI	(Emergency)	2.5 min	815 shp / 745 shp (102% NR)
	(Emergency)	Maximum Continuous	735 shp / 646 shp (102% NR)
See approved Rotorcraft Flight Manuals for TOT, N1			

TRANSMISSION TORQUE LIMITS			
AEO		Take-Off Power (5 minutes)	960 shp 107% TQ (100% NR)
		Maximum Continuous	900 shp 100% TQ (100% NR)
		Transient (6 sec)	990 shp 110% TQ (100% NR)
OEI	(Emergency)	2.5 min	730 shp 162% TQ (100% NR)
	(Emergency)	Maximum Continuous	600 shp 133% TQ (100% NR)
	(Emergency)	Transient (6 sec)	780 shp 173% TQ (100% NR)
See approved Rotorcraft Flight Manuals Section 1 for additional detailed information			

5.3.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6.	**Fluids**	
6.1	Fuel	For all temperatures: ASTM D-1655 Jet A, ASTM D-1655 Jet A1, MIL-T-5624 Type JP-5, MIL-T-83133 Type JP-8, GOST 10227-86 R.T., GSTU 320.00149943.007-97 R.T., GOST 10227-86 S-1, GSTU 320.00149943.011-99 TS-1 For detailed information refer to approved RFM Section 1
6.2	Oil	Engines: MIL-PRF-23699 Transmission: MIL-PRF-23699 DOD-PRF-85734 For detailed information refer to approved RFM Section 1
7.	**Fluid capacities**	
7.1	Fuel	Total usable: 563 litres See RFM for unusable fuel
7.2	Oil	Engines: 5.12 litres for each engine Transmission: 11.0 litres (Refer to approved RFM for non-drainable lubricant)
8.	**Air Speed Limitations**	V_{NE}: 168 KIAS Power on V_{NE}: 128 KIAS Power off Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations
9.	**Rotor Speed Limitations**	Power on (AEO): Maximum Continuous 101% Minimum 99% Take-off and landings 102% Power off: Maximum 110% Minimum 95% Refer to approved RFM Section 1 for detailed information
10.	**Maximum Operating Altitude and Temperature**	
10.1	Altitude 20 000 ft (6 096 m) Hp	
10.2	Temperature Refer to approved RFM Section 1 for OAT Take-off and landing altitude and for temperature limitations	
11.	**Operating Limitations**	VFR day and night, IFR, non-icing conditions. Category A operations
12.	**Maximum Mass**	3 175 kg

13.	**Centre of Gravity Range**	Refer to approved RFM for CG envelope
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 635 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 6 for detailed information
15.	**Levelling Means**	The spirit level plate is to be placed on cabin roof right stanchion reference. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	One (1) pilot (right seat)
17.	**Maximum Passenger Seating Capacity**	Seven (7) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin
19.	**Maximum Baggage/ Cargo Loads**	120 kg according to load distribution defined in RFM – Section 6 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg
20.	**Rotor Blade Control Movement**	MR (collective): min -1°24’ max +12° TR: RH pedal -7° LH pedal +24° For rigging information refer to Maintenance Manual
21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	For helicopter s/n 22201, 22203, from 22214 through 22362, 22364, and subs: Refer to approved Airworthiness Limitations: 0B-B-AMPI-00-P, Chapter 04 For helicopter s/n 22202, 22204 through 22213, 22363: Refer to approved Airworthiness Limitations: 0B-C-AMPI-00-P, Chapter 04
23.	**Wheels and Tyres**	360x135-6 tubeless

iv. Operating and Service Instructions

1.	**Flight Manual**	109G0040A018 AW109SP Issue B and later approved revisions 109G0040A019 AW109SP Optional Equipment Supplement Issue B and later approved revisions (for NVIS operation as per Note 2 in this Section, refer to supplement 10) For helicopter with Rega Customisation (P/N 109-B810- 12-101): 109G0040A020 AW109SP REGA RFM Issue B and later approved revisions 109G0040A021 AW109SP REGA Optional Equipment Supplement Issue B and later approved revisions (for NVIS operation as per Note 4 in this Section, refer to supplement 9.1-2)
2.	**Maintenance Manual**	For helicopter s/n 22201, 22203, from 22214 through 22362, 22364, and subsequent: 0B-B-AMPI-00-P ⇨ Chapter 00 (first issue and subs), Chapter 04 (first issue and subs approved), Chapter 05 (first issue and subs) For helicopter s/n 22202, 22204 through 22213, 22363: 0B-C-AMPI-00-P ⇨ Chapter 00 (first issue and subs), Chapter 04 (first issue and subs approved), Chapter 05 (first issue and subs) For all helicopter: 0B-A-AMP-00-X ⇨ Chapters 6 and subs (first issue and subs)
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to the section III.3 above and to approved Rotorcraft Flight Manuals and related supplements for the approved mandatory and optional equipment.

v. Operational Suitability Data

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

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

TCH doc 109G0270Q014/03 Issue F, EASA-approved by letter 10056041, or subsequent approved revisions

2. Flight Crew Data

TCH doc 109G0000N174 Issue B, EASA-approved by letter 10065544, or subsequent approved revisions.

3. SIM Data

Reserved

4. Maintenance Certifying Staff Data

Reserved

vi. Notes

1. The fuel vented from the injector line at the engine shutdown, is recollected into the main fuel tank, according to the Drawing 109-0601-49
2. Kit P/N 109-B810-12-101, per RFM 109G0040A021 Supplement n. 9.1-2., and Kit P/N 109-B810-12-103, per RFM 109G0040A019 Supplement n. 10, allow NVIS Operations. Modifications that add or change systems that emit or reflect light, have the potential to alter or change the NVIS lighting-NVG compatibility. For this reason, they require an engineering evaluation that must be approved by the aircraft certification authority.

   Subsequent modifications and Deviations to the NVG helicopter configuration shall be managed in accordance with document 109G3360E003 revision B “AW109SP HELICOPTER NVG POLICY”.

   The aircraft configuration involving internal/external emitting/reflecting equipment approved for use with NVG is described in the Report 109G3360A001 revision E “AW109SP NVG Compatibility Reference Handbook”.
3. Manufacturer’s eligible serial number:

   Assembly drawing 109-9000-09-105/-107 (ref. Type Design 109G0000X006/09) from s/n 22201 to s/n 22499.
4. Designation: GrandNew is used as marketing designation for AW109SP helicopters
5. The auxiliary installation Weather Radar RDR 2000 P/N 109-B810-15 is applicable to AW109SP helicopters s/n 22201, 22203, 22214, and subsequent.
6. 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 109G9850A001 “AW109SP - PED Compatibility Reference Handbook”.
7. Cabin Interior and Seating Configurations must be approved.

Section 12 : A109N

i. General

1. Type / Variant / Model

1.1 Type

A109

1.2 Model

A109N

1.3 Variant

-

2. Airworthiness Category Small Rotorcraft

Small Rotorcraft, Category A

3. Type Certificate Holder

Leonardo S.p.A. Helicopters

Piazza Monte Grappa 4

00195 Roma

Italy

See Section 13ii.

4. Manufacturer

See Section 13ii.

5. Type Certification Application Date

29 November 2005

6. State of Design Authority

EASA

7. EASA Type Certification Date

29 November 2010

ii. Certification Basis

1. Reference Date for determining the applicable requirements.

29 November 2007

2. Airworthiness Requirements

FAR 27 / JAR 27 / CS-27 Amdt. as defined here below.

FAR 27 / JAR 27 as quoted in the EASA TCDS R.005 for unchanged/unaffected areas, systems, parts or appliances.

CS-27 Amdt./ 14 November 2003 for the new or changed/affected areas, systems, parts or appliances with respect to the A109E (ref documents n°109G0000N023 Rev C and n°109G0000N025 Rev C), except the following paragraphs:

CS 27.561 replaced by FAR 27.561 Base Amdt. (except for pilot and co-pilot seats)

CS 27.785 replaced by FAR 27.785 Amdt. 21 (except for pilot and co-pilot seats)

CS 27.963 replaced by FAR 27.963 Amdt. 23

CS 27.971 replaced by FAR 27.971 Base Amdt.

CS 27.973 replaced by FAR 27.973 Base Amdt.

For IFR Operation: Appendix B to CS-27 Amdt./

For Category A Operations: Appendix C to CS-27 Amdt./

3. Special Conditions

HIRF ⇨ INT/POL/27&29/1 Issue 3 (2003) – Protection from the effects of HIRF – Interim Policy in the Administrative and Guidance Material, Section 3, Part 3 High Intensity Radiated Fields.

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

None.

7. Requirements Elected to Comply

None.

8. Environmental Protection Requirements

8.1 Noise Requirements

see TCDSN UK.TC.R.00103

8.2 Emissions Requirements

ICAO Annex 16, Ed.1993, Vol II, Part II, Chapter 2 (fuel venting) (see Note 1 in this Section)

9. Operational Suitability Data

Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

iii. Technical Characteristic and Operating Limitations

1. Type Design Definition

Type Design Definition document 109G0000X006/08 Rev. Z and subsequent approved revisions

2. Description

Light twin-engine helicopter, four (4) blades articulated main rotor, twin (2) blades teetering tail rotor, tricycle retractable landing gears, one / two pilots and six /seven passengers' capacity.

The A109N differs from A109E model for the installation of Pratt & Whitney Canada PW207C turbo engines, controlled through FADEC, pilots crash resistant seats, main rotor group, engine and transmission oil cooling system, digital four-axis dual-duplex Automatic Flight Control System and full digital flight instruments and radio management system.

3. Equipment

Basic equipment required by the Airworthiness Specifications (see Certification Basis) shall be installed on the helicopter for Airworthiness Certificate release. In addition, the following equipment is required:

- Civil Configuration Kit P/N 109-B810-01-101
- Engine Fire Extinguisher P/N 109-0811-39-101 for Category A Operations

Approved mandatory and optional equipment are listed in the Report 109G0840W025/01, Issue M "A109N Helicopter – Chart A Equipment list".

4. Dimensions

4.1 Fuselage Length: 11.43 m

Width: 3.29 m

Height: 3.42 m

4.2 Main Rotor Diameter: 10.83 m

4.3 Tail Rotor Diameter: 1.94 m

5. Engine

5.1 Model

Pratt & Whitney Canada

2 x Model PW207C

5.2 Type Certificate

State of Design Engine	TC/TCDS n°:	TCCA E-23
	EASA TC/TCDS n°:	EASA.IM.E.017

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

INSTALLED ENGINE LIMITS (Thermodynamics / Mechanical Power)			
AEO		Take-Off Power (5 minutes)	735 shp / 572 shp (102% NR)
		Maximum Continuous	625 shp / 572 shp (102% NR)
OEI	(Emergency)	2.5 min	815 shp / 745 shp (102% NR)
	(Emergency)	Maximum Continuous	735 shp / 646 shp (102% NR)
See approved Rotorcraft Flight Manuals for TOT, N1			

TRANSMISSION TORQUE LIMITS			
AEO		Take-Off Power (5 minutes)	960 shp 107% TQ (100% NR)
		Maximum Continuous	900 shp 100% TQ (100% NR)
		Transient (6 sec)	990 shp 110% TQ (100% NR)
OEI	(Emergency)	2.5 min	730 shp 162% TQ (100% NR)
	(Emergency)	Maximum Continuous	600 shp 133% TQ (100% NR)
	(Emergency)	Transient (6 sec)	780 shp 173% TQ (100% NR)
See approved Rotorcraft Flight Manuals Section 1 for additional detailed information			

5.3.2 Other Engine and Transmission Torque Limits Refer to approved RFM

6. Fluids

6.1 Fuel

For all temperatures:

ASTM D-1655 Jet A, ASTM D-1655 Jet A1, MIL-T-5624 JP-5, MIL-T-83133 JP-8

For detailed information refer to approved RFM Section 1

6.2 Oil

Engines: MIL-PRF-23699 (MIL-L-23699)

Transmission: MIL-PRF-23699 (MIL-L-23699)
DOD-PRF-85734

For detailed information refer to approved RFM Section 1

7. Fluid capacities

7.1 Fuel

Total usable: 595 litres

See RFM for unusable fuel

7.2 Oil

Engines: 5.12 litres for each engine

Transmission: 11.0 litres

(Refer to approved RFM for non-drainable lubricant)

8. Air Speed Limitations

V_{NE}: 168 KIAS Power on

V_{NE}: 128 KIAS Power off

Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations

9.	**Rotor Speed Limitations**	Power on (AEO): Maximum Continuous 101% Minimum 99% Take-off and landings 102% Power off: Maximum 110% Minimum 95% Refer to approved RFM Section 1 for detailed information

10. Maximum Operating Altitude and Temperature

10.1 Altitude 20 000 ft (6 096 m) Hp

10.2 Temperature Refer to approved RFM - Section 1 Take-off and landing altitude and for temperature limitations

11.	**Operating Limitations**	VFR day and night IFR Non-icing conditions Category A operations
12.	**Maximum Mass**	3 175 kg
13.	**Centre of Gravity Range**	Refer to approved RFM Section 1 for CG envelope
14.	**Datum**	Longitudinal: the datum line (STA 0) is located at 1 835 mm forward of the front jack point. Lateral: the datum line (BL 0) is located at ±450 mm inboard of each of the two main jack points and it coincides with the helicopter longitudinal plane of symmetry. Refer to RFM Section 6 for detailed information
15.	**Levelling Means**	The spirit level plate is to be placed on cabin roof right stanchion reference. Refer to Maintenance Manual.
16.	**Minimum Flight Crew**	One (1) pilot (right seat)
17.	**Maximum Passenger Seating Capacity**	Seven (7) passengers
18.	**Passenger Emergency Exit**	Two (2), one (1) on each side of the passenger cabin
19.	**Maximum Baggage/ Cargo Loads**	50 kg according to load distribution defined in RFM – Section 6 Max load on cargo compartment floor: 500 kg/m^2 Max load on securing points of cargo compartment: 91 kg
20.	**Rotor Blade Control Movement**	MR (collective): min -1°4’ max +12° TR: RH pedal -7° LH pedal +24° For rigging information refer to Maintenance Manual

21.	**Auxiliary Power Unit (APU)**	n/a
22.	**Life-limited Parts**	Refer to approved Airworthiness Limitations: 0N-A-AMPI-00-P, Chapter 04, Section 0N-A-04-10-00-00A-000A-A
23.	**Wheels and Tyres**	360x135-6 tubeless

iv. Operating and Service Instructions

1.	**Flight Manual**	109G0040A015 Issue 1 and subsequent approved revisions 109G0040A016 Issue 1 and subsequent approved revisions
2.	**Maintenance Manual**	0N-A-AMPI-00-P Issue 1 and subsequent approved revisions 0N-A-AMP-00-P Issue 1 and subsequent approved revisions
3.	**Service Letters and Service Bulletins**	As published by the Type Certificate Holder as per Section 13ii.
4.	**Required Equipment**	Refer to the section III.3 above and to approved Rotorcraft Flight Manuals and related supplements for the approved mandatory and optional equipment.

v. Operational Suitability Data

See Section 12, ii., item 9.

vi. Notes

1. The fuel vented from the injector line at the engine shutdown, is recollected into the main fuel tank, according to the Drawing 109-0601-49
2. Manufacturer’s eligible serial number:

   Assembly Drawing 109-9000-10-103 (ref Type Design 109G0000X006/08 Rev Z) from s/n 22501 to s/n 22699
3. Designation: AW109N and Nexus are used as marketing designation for A109N helicopters
4. Cabin Interior and Seating Configurations must be approved.
5. Requirements for the issue of the Italian Airworthiness Certificate
   a. The equipment required by the applicable airworthiness regulations (see Certification Basis) must be installed in relevant aircraft for certification.

Section 13 : Administration

i. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
AEO	All Engine Operative
Amdt.	Amendment
AW	AgustaWestland S.p.A
B.L. (or BL)	Butt Line
C.G. (or CG)	Centre of Gravity
CR	(European) Commission Regulation
CS	Certification Specification
ENAC	Ente Nazionale per l'Aviazione Civile (Italian Civil Aviation Authority)
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
HIRF	High Intensity Radiated Field
Hp	Pressure Altitude
IFR	Instrument Flight Rules
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirement
KIAS	Knots Indicated Air Speed
LDG	Landing
LH	Left hand
Max	Maximum
MMEL	Master Minimum Equipment List
P/N	Part Number
MPM	Maintenance Planning Manual
MR	Main Rotor
n/a	Not applicable
NVG	Night Vision Google
OAT	Outside Ambient Temperature
OEI	One Engine Inoperative
OES	Optional Equipment Supplements
OSD	Operational Suitability Data
RAI	Registro Aeronautio Italiano, predecessor of ENAC (Aviation Authority of Italy)
RFM	Rotorcraft Flight manual
RH	Right Hand
s/n	Serial Number
SC	Special Condition
Sec	Seconds
Shp	Shaft Horsepower
SIM	Simulator
STA	Station
TCH	Type Certificate Holder

Acronym / Abbreviation	Definition
TO	Take-Off
TR	Tail Rotor
VFR	Visual Flight Rules
V_{NE}	Never Exceed Speed

ii. Type Certificate Holder Record

Type Certificate Holder and (European) Manufacturer record	Period
Costruzioni Aeronautiche Giovanni Agusta Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	28 May 1975 - 29 November 1988
Agusta S.p.A. Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	30 November 1988 - 19 December 1996
Agusta un'azienda di Finmeccanica S.p.A. Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	20 December 1996 - 27 December 1999
Agusta S.p.A. Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	28 December 1999 - 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	31 July 2014 - 31 December 2015
Finmeccanica S.p.A., Helicopter Division Piazza Monte Grappa, 4; 00195 Roma - Italy	1 January 2016 - 14 July 2016
Leonardo S.p.A., Helicopters Piazza Monte Grappa, 4; 00195 Roma - Italy	since 15 July 2016
(USA) Manufacturer	**Period**
Agusta Aerospace Corporation (AAC) 3050 Red Lion Road, Philadelphia, PA 19114 - USA	until 31 May 2011
AgustaWestland Philadelphia Corporation 3050 Red Lion Road, Philadelphia, PA 19114 - USA	since 1 June 2011

iii. Amendment Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	22 Apr 2024	The content of the initial issue of this UK CAA TCDS was taken from EASA TCDS No. EASA.R.005 Issue 23 dated 7 December 2020 which was the current EASA version at 31 December 2020 and therefore the version accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement. Other changes introduced are as follows: Section 10, V.: s/n amended in Note 3. Section 13 OSD moved to individual Sections for each helicopter model / variant. All Sections, II.: updated to meet TCDS format policy. Section 1 (A109) amended: - V.Notes: Note 3 added. Section 2 (A109A) amended: - V.Notes: Note 3 added. Section 3 (A109AII) amended: - V.Notes: Note 2 added. Section 4 (A109C) amended: - V.Notes: Note 2 added. Section 5 (A109K2) amended: - V.Notes: Note 5 added. Section 6 (A109E) amended: - V.Notes: Note 6 added. Section 7 (A119) amended: - III.22, IV.2, V.2: Updated references to the applicable publications; - V.Notes: Notes 6 and 7 added. Section 9 (A109S) amended: - II.2, II.3, II.6, III.3, III.4, III.8, III.14, III.22, III.23, IV.1, IV.2, V.2, V.3, V.4.: included references applicable to A109S helicopters equipped with Trekker kit P/N 109G0000F01-201 (4-Axis AFCS); - V.Notes: Notes 5 and 6 added. Section 10 (AW119MKII) amended: - III.22, IV.2: Updated references to the applicable publications; - V.Notes: Note 7 added. Section 11 (AW109SP) amended: - III.22, IV.2: Updated references to the applicable publications; - V.Notes: Note 6 added. Section: Notes Pertinent to All Models - Note 1 moved to each separate aircraft section. - Note 2 deleted following communication with TCH. - Note 3 and 4 moved to Section 13.	Issue 1 22 Apr 2024

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