EASA

TYPE-CERTIFICATE
DATA SHEET

No. R.002

for
Puma and Super Puma

Type Certificate Holder
Airbus Helicopters

Aéroport International Marseille – Provence
13725 Marignane cedex
France

For Models: SA 330 J
AS 332 C
AS 332 L
AS 332 C1
AS 332 L1
AS 332 L2
EC 225 LP
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SECTION 1: SA 330 J

(SA 330 F and SA 330 G for memory – see Note 5)

I. General

1. Type/ Variant or Model
   1.1 Type SA 330
   1.2 Variant SA 330 J

2. Airworthiness Category Large Rotorcraft, Category A and B

3. Manufacturer
   before January 1, 1992: AEROSPATIALE
   after January 07, 2014:
   Airbus Helicopters
   Aeroport International Marseille-Provence 13725 MARIGNANE cedex - France

4. EASA Certification Application Date N/A (to DGAC-F)

5. National Certifying Authority DGAC-F

6. National Authority Type Certificate Date 29 April 1976
   (DGAC-F National TC No. 56)

II. Certification Basis (*) according to DGAC letter 02827 SFAC/TC, dated 30 March 1978

1. Reference Date for determining the applicable requirements N/A

2. Airworthiness Requirements (*) FAR 29 with amendments 29-1 to 29-9 inclusive and the addition of FAR 29.951 (c), 29.1183, 29.1305 (a) (16) of the Amdt. 29-10 for version 330 J equipped with white anti-collision light

3. Special Conditions (*) DGAC-F CS n°1 – Icing;
   DGAC-F CS n°2 – Lightning

4. Exemptions None

5. Deviations (*) For SA330J aircraft fitted with red anti-collision light the FAR29 amendment 29-7 is excluded
6. Equivalent Safety Findings None
7. Requirements elected to comply None
8. Environmental Protection Requirements N/A

III. Technical Characteristics and Operational Limitations

1. Type Design Definition SA 330 J definition is obtained by applying modifications mentioned in note 330A.05.0065 to the definition of former SA330G model, which consisted itself of SA330F previous model with design changes as listed in note 330A.05.0060 (see also Note 5).

2. Description Large twin-engine helicopter; the SA330J model is designed as a derivative product of the former SA330G, which is originally derived from the SA330F model (see also Note 5.).

3. Equipment As per compliance with applicable FAR29 airworthiness requirements and referenced within approved Flight Manual

4. Dimensions
   4.1 Fuselage Length 14,82m
   Width 3,00m
   Height 5,14m
   4.2 Main Rotor 4 blades Diameter 15,09m
   4.3 Tail Rotor 5 blades Diameter 3,04m

5. Engine
   5.1 Model 2 Turboméca TURMO IV C
   5.2 Type Certificate DGAC-F engine TCDS n° M8
   5.3 Limitations
5.3.1 Installed Engine Limits

Refer to approved Flight Manual

5.3.2 Transmission Torque Limits

Refer to approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

Refer to approved Flight Manual

6.2 Oil

Refer to approved Flight Manual

6.3 Additives

Refer to approved Flight Manual

7. Fluid capacities

7.1 Fuel

1,565 l (413 US gals)

1,544 l (408 US gals) usable

7.2 Oil

Engines 2 x 12 l

MGB 22 l

IGB 0,75 l

TGB 1,4 l

7.3 Coolant system capacity

N/A

8. Air Speeds Limits

Vne Power on 310km/h (167kt) at ISA

See Level for 4.000kg

See Flight Manual for other approved airspeed limits

9. Rotor Speed Limits

Power On: Nominal governed 265 ± 7 rpm

Minimum 220 rpm (transient)

Power Off: Maximum 310 rpm

Minimum 220 rpm (IAS < 108kt)

240 rpm (IAS > 108kt)

10. Maximum Operating Altitude and Temperature

10.1 Altitude

Take-off and landing

- 1.650ft/ + 13,000ft pressure altitude

En route

+ 16.500ft pressure altitude

10.2 Temperature

- 40°C to + 50°C
11. Operating Limitations

- VFR day and night
- IFR day and night
- Non-icing conditions

12. Maximum Masses

- Take-off and landing: 7,400kg (16,300lb)

13. Centre of Gravity Range

- Refer to approved Rotorcraft Flight Manual

14. Datum

- Longitudinal: 4,70m (183ft 04in) forward of main rotor centreline
- Lateral: aircraft symmetry plane

15. Levelling Means

- Levelling plate on right side of the fuselage and graduated plate for plumb line on left side

16. Minimum Flight Crew

- VFR: 1 pilot in category B
- 1 pilot + 1 crew member in category A
- IFR: 2 pilots in categories A and B

17. Maximum Passenger Seating Capacity

- 19

18. Passenger Emergency Exit

- Refer to approved Flight Manual

19. Maximum Baggage/ Cargo Loads

- the cabin floor (from + 2,48 m to + 7,63 m) is provided with the structural strength required for a load of 800kg/m² evenly distributed in cargo configuration

20. Rotor Blade control movement

- For rigging information, refer to AMM

21. Auxiliary Power Unit (APU)

- None

**IV. Operating and Service Instructions**

1. Flight Manual

- SA 330J Flight Manual approved on 29 April 1976 by DGAC-F (*) or subsequent DGAC-F or EASA approved revisions.

(*) there are other Flight Manuals, which resulted from various European type certifications, e.g. Flight Manual with identification code E (CAA-UK).

SA 330 Maintenance Manual including:
- Maintenance programme as Maintenance Servicing Recommendations (PRE)
- Airworthiness Limitations Section as PRE Chapter 05.99 approved by DGAC-F or EASA
SA 330 FREM (Transmission assembly overhaul booklets); SA 330 Repair Manual

3. Service Letters and Service Bulletins

As published by Aérospatiale or Eurocopter or Airbus helicopters and approved by DGAC-F or Eurocopter DOA or Airbus helicopters DOA

4. Required Equipment

- As per compliance with applicable FAR 29 requirements and in accordance with the original Type Design standard, refer also to the approved Flight Manual;
- Approved equipment items are covered by document No 330A.04.1155 dated 17 September 1970 updated to issue J on 26 March 1981;
- Approved equipment items required for the flight in icing conditions are covered by document 330A.04.1483

V. Notes

1. Eligible serial numbers: 1371 and subsequent of SA 330 J model

2. The certified “optional” installations are each approved independently of the basic helicopter and an approved Flight Manual Supplement is associated to each optional installation if necessary

3. Cabin Interior and Seating Configurations must be approved.

4. Commercial designation: PUMA

5. Upon Eurocopter request for its surrender, the Type Certificate of both models SA 330 G and SA 330 F has been revoked by EASA as of 12 November 2009 (see EASA Certification Information dated 16 November 2009).
SECTION 2: AS 332 C, C1, L, L1

I. General

1. Type/Variant or Model
   1.1 Type
      AS 332
   1.2 Variant
      AS 332 C, AS 332 C1, AS 332 L, AS 332 L1

2. Airworthiness Category
   Large Rotorcraft, Category A and B

3. Manufacturer
   before January 1, 1992: AEROSPATIALE
   after January 1, 1992: Eurocopter
   after January 07, 2014: Airbus Helicopters
   Aeroport International Marseille-Provence 13725 MARIGNANE cedex - France

4. EASA Certification Application Date (to DGAC-F)
   AS 332 C 04 April 1978
   AS 332 L 16 July 1980
   AS 332 C1 and L1 18 June 1984

5. National Certifying Authority
   DGAC-F

6. National Authority TC Date
   AS 332 C 24 April 1981
   AS 332 L 02 December 1981
   AS 332 C1 and L1 14 March 1985
   (DGAC-F National TC No. 56)

II. Certification Basis

(*) according to DGAC letter 53.904 dated 18 August 1980
and doc. “Airworthiness Criteria for Helicopter Instrument
Flight” dated 15 December 1978 for IFR flight

1. Reference Date for determining the applicable requirements
   See Application Date

2. Airworthiness Requirements
   For original AS 332C, C1, L, L1 (*):
   FAR 29 with amendments 29-1 to 29-16 inclusive.
   according to Reference CRI A-01 - see Note 8.
AS332C1e and AS332L1e)

3. Special Conditions
For original AS 332 C, C1, L, L1 (*):
- DGAC-F CS n°1 (Icing) and DGAC-F CS n°2 (Lightning) as applicable to previous SA 330 J model and notified with DGAC-F letter 02827 SFACT/TC dated 30 March 1978
- DGAC-F CS n°20.2 dated 11 May 1982 for category II, IFR flight.

For AS332 C1 and L1 equipped with AHCAS: (commercial reference AS332C1e and AS332L1e)
- Minimum in flight experience (Reference CRI B-01)
- Search and Rescue system (Reference CRI B-02)
- Protection from the effects of High Intensity Radiated Fields (HIRF) (Reference CRI F-02)

4. Exemptions
None

5. Deviations
None

6. Equivalent Safety Findings
For original AS 332 C, C1, L, L1 (*):
- Endurance Tests of redesigned Tail Rotor Hub pitch change control assembly (MOD 07.66205) (Reference CRI E-01)

For AS332 C1 and L1 equipped with AHCAS: (commercial reference AS332C1e and AS332L1e)
- IFR Static Longitudinal Stability – Airspeed Stability (Reference CRI B-04)
- VNE aural warning (Reference CRI F-01)
- Airspeed indicator markings (Reference CRI G-01)
- Powerplant instrument markings (Reference CRI G-02)

7. Requirements elected to comply
For original AS 332 C, C1, L, L1 (*): None

For AS332 C1 and L1 equipped with AHCAS: (commercial reference AS332 C1e and AS332L1e) see Note 8.

8. Environmental Protection Requirements
N/A
III. Technical Characteristics and Operational Limitations

1. Type Design Definition

- **AS 332 C**: as per document 332A04.0009 and modifications list in doc. 332A04.3269 for 8.350kg
- **AS 332 L**: as per doc. 332A04.0010 for 8.350kg
- **AS 332 C, L**: as per doc. 332A04.3300 for 8.600kg
- **AS 332 C1, L1**: as per doc. 332A04.3305 for 8.600kg

AS332C1 and L1 equipped with AHCAS (commercial reference AS332C1e and AS332L1e)

Refer to Note 8

2. Description

Large twin-engine helicopter; designed as a derivative product of the former type certified SA 330 models, that features two fuselage length configurations (standard for AS 332 C, C1 versions and extended body for AS 332 L, L1) and two engines configurations (MAKILA 1A for AS 332 C, L and MAKILA 1A1 for AS 332 C1, L1)

3. Equipment

As per compliance with applicable FAR 29 airworthiness requirements and referenced within approved Flight Manual

4. Dimensions

4.1 Fuselage

<table>
<thead>
<tr>
<th>Model</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
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<tbody>
<tr>
<td>AS 332 C, C1</td>
<td>15,53m</td>
<td>3,79m</td>
<td>4,94m</td>
</tr>
<tr>
<td>AS 332 L, L1</td>
<td>16,29m</td>
<td>3,79m</td>
<td>4,95m</td>
</tr>
</tbody>
</table>

4.2 Main Rotor

4 blades Diameter 15,60m

4.3 Tail Rotor

5 blades Diameter 3,05m

5. Engine

5.1 Model

- AS 332 C, L: 2 Turboméca MAKILA 1A
- AS 332 C1, L1: 2 Turboméca MAKILA 1A1

5.2 Type Certificate

EASA engine TCDS No: E.072

5.3 Limitations
5.3.1 Installed Engine Limits  Refer to approved Flight Manual

5.3.2 Transmission Torque Limits  Refer to approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel  Refer to approved Flight Manual

6.2 Oil  Refer to approved Flight Manual

6.3 Additives  Refer to approved Flight Manual

7. Fluid capacities

7.1 Fuel  AS 332 C, C1
standard configuration: 1.556 l (411 US gals)
with optional internal 6th tank: 324 l (86 US gals)
with optional sponson tanks 650 l (172 US gals)
Total available: 2.530 l (669 US gals)

AS 332 L, L1
standard configuration: 2.043 l (540 US gals)
with optional internal 6th tank: 324 l (86 US gals)
with optional sponson tanks 600 l (158 US gals)
Total available: 3.017 l (738 US gals)

see Flight Manual for other approved optional fuel tanks configurations and for unusable fuel quantities.

7.2 Oil  Engines  2 x 7.6 l
MGB  19.6 l
IGB  0.62 l
TGB  1.44 l

8. Air Speeds Limits

Vne Power On: 310 km/h (167kt) at ISA sea Level for M ≤ 8.350kg (18.410 lb.)
278 km/h (150kt) at ISA sea Level for M > 8.350kg (18.410 lb.)

Vne Power Off: 278 km/h (150kt) at ISA sea Level for M ≤ 8.350kg (18.410 lb.)
268 km/h (145kt) at ISA Sea Level for > 8.350kg (18.410 lb.)

9. Rotor Speed Limits

Power On: Maximum 275 rpm
Nominal 265 rpm
Minimum 245 rpm
Min Transient 220 rpm
10. Maximum Operating Altitude and Temperature

10.1 Altitude - AS332C, L

Take-off and landing
- 15,000 ft. pressure altitude for M ≤ 8,350 kg (18,410 lb.)
- 6,000 ft. pressure altitude for M > 8,350 kg (18,410 lb.)

En route
- 20,000 ft. pressure altitude for M ≤ 8,350 kg (18,410 lb.)
- 20,000 ft. pressure altitude for M > 8,350 kg (18,410 lb.)

10.2 Altitude - AS 332C1, L1

Take-off and landing
- 1,640 ft. pressure altitude / 15,000 ft. density altitude

En route
- 1,640 ft. / 25,000 ft. pressure altitude for M ≤ 8,350 kg (18,410 lb.)
- 1,640 ft. / 9,500 ft. pressure altitude for M > 8,350 kg (18,410 lb.)

10.3 Temperature

- 30°C to ISA + 35°C limited to 50°C.

see relevant Flight Manual Supplement for colder operation down to -45°C.

11. Operating Limitations

VFR day and night
IFR day and night
Non-icing conditions

Flight in full icing conditions is permitted on AS 332C, L and L1 models only when equipment items listed in relevant flight manual supplement are installed.

Flight in limited icing conditions is permitted on AS 332L and L1 models only when equipment items listed in relevant approved flight manual supplements are installed (see Note 6).

12. Maximum Masses

Take-off and landing

AS332C, L
- 8,350 kg (18,410 lb.), prior SB 01.03 embodiment
- 8,600 kg (18,960 lb.), after SB 01.03 embodiment

AS 332 C1, L1
- 8,600 kg (18,960 lb.)

13. Centre of Gravity Range

Refer to approved Rotorcraft Flight Manual
14. Datum
   Longitudinal: 4.70m (183ft 4in) forward of main rotor centreline
   Lateral: aircraft symmetry plane

15. Levelling Means
   Levelling plate on right side of the fuselage and graduated plate for plumb line on left side

16. Minimum Flight Crew
   AS 332 C, L
     VFR: 1 pilot + 1 qualified crew member(*)
     IFR: 2 pilots
   AS 332 C1, L1
     VFR: below 20.000ft, 1 pilot + 1 qualified crew member (*)
           above 20.000ft, 2 pilots
     IFR: 2 pilots
   (*) the qualified crew member is not required if one lane of each AP channel, at least, is in operation

AS332 C1 and L1 equipped with AHCAS (commercial reference AS332 C1e and AS332 L1e)
   VFR: 1 pilot
   IFR: 2 pilots

17. Maximum Passenger Seating Capacity
   AS 332 C, C1 19
   AS 332 L, L1 24

18. Passenger Emergency Exit
   Refer to approved Flight Manual

19. Maximum Baggage/ Cargo Loads
   the cabin floor (from +2.48m to +7.63m) is provided with the structural strength required for a load of 800kg/m² evenly distributed in cargo configuration

20. Rotor Blade control movement
   For rigging information, refer to AMM

21. Auxiliary Power Unit (APU)
   None

 IV. Operating and Service Instructions

1. Flight Manual
   AS 332 C
     Flight Manual approved on 24 April 1981 by DGAC-F (*) or subsequent DGAC-F or EASA approved revisions
   AS 332 L
     Flight Manual approved on 2 December 1981 by DGAC-F (*) or subsequent DGAC-F or EASA approved revisions
   AS 332 C1
     Flight Manual approved on 14 March 1985 by DGAC-F (*) or subsequent DGAC-F or EASA approved revisions
   AS 332 L1
     Flight Manual approved on 14 March 1985 by DGAC-F (*) or subsequent
AS332L1 equipped with AHCAS
(commercial reference AS332L1e)

AS332C1 equipped with AHCAS
(commercial reference AS332C1e)

DGAC-F or EASA approved revisions
Flight Manual approved on 14 June 2012 by EASA or subsequent EASA approved Issues

Flight Manual approved on 13 November 2013 by EASA or subsequent EASA approved Issues

(*) there are other Flight Manuals, which resulted from various European type certifications, e.g. Flight Manual with identification code E (CAA-UK), code D (LBA) or code F (ENAC)


Airworthiness Limitations: AS 332C, C1, L, L1 Maintenance Servicing Recommendations, Chapter 05.99, approved by DGAC-F or EASA or Master Servicing Manual Chapter 04 approved by EASA

Maintenance Programme:
- AS 332C, C1, L, L1 Maintenance Servicing Recommendations (PRE),
- AS 332C, C1, L, L1 Aircraft Maintenance Manual (AMM)

3. Service Letters and Service Bulletins

As published by Aérospatiale or Eurocopter or Airbus Helicopters and approved by DGAC-F or Eurocopter DOA or Airbus Helicopters DOA

4. Required Equipment

- As per compliance with applicable FAR 29 requirements and in accordance with the original Type Design standard;
- Approved equipment items are covered by document No 3320A.04.3254;
- Refer to approved Flight Manual, MMEL and also to Note 7 below.

5. Master Minimum Equipment List

AS 332C, C1, L, L1 approved MMEL

V. Notes

1. Eligible serial numbers:
   - 2001 and subsequent of AS 332 C model
   - 2004 and subsequent of AS 332 L model
2132 and subsequent of AS 332 L1 model  
see Note 2 for eligible serial numbers of AS 332 C1 model

2. Conversion from AS 332 C, L models to AS 332 C1, L1 variants is possible through SB 01.00.26.

3. The certified “optional” installations are each approved independently of the basic helicopter and an approved Flight Manual Supplement is associated to each optional installation if necessary.

4. Cabin Interior and Seating Configurations must be approved.

5. Commercial designation : SUPER PUMA Mk I corresponds to AS 332 C, C1, L and L1 models; Commercial references AS332 C1e and AS332L1e are used for AS332C1 and AS332L1 equipped with AHCAS system and modifications listed below in Note 8.

6. Flight in “icing conditions of limited severity”:
   • permitted on AS 332L and L1 models only, with relevant Flight Manual Supplement, formerly approved under code E (CAA-UK) at normal revision RN0, or subsequent DGAC-F or EASA approved issues;
   • such code E (CAA-UK) Flight Manual Supplement does not constitute operational approval and operations must be conducted in accordance with applicable operational regulation.

7. AS 332C, L and L1 helicopters without MGB fire detection system are those modified by AMS 07-21653, design change resulting from CAA-UK’s original type certification.

8. For AS332C1,L1 Aircrafts with the following Eurocopter modifications installed (commercial reference AS332C1e,AS332L1e), the design change was classified as Significant per 21A.101 and the certification basis is listed below:
   MOD 07.26640 - Hydraulic and flight control adaptation for AFCS integration;
   MOD 07.26641 - VMS installation;
   MOD 07.26642 - AFCS installation;
   MOD 07.26643 - FDS installation;
   MOD 07.26644 - Primary references installation;
   MOD 07.26645 - Cockpit adaptation for AHCAS installation;
   MOD 07.26646 - Cockpit lighting;
   MOD 07.26647 - Electrical wiring and connections adaptation;
   MOD 07.26648 - Electrical power distribution modification;
   MOD 07.26649 - Warnings/Cautions and ancillaries adaptation;
   MOD 07.26650 - Equipment installation structure adaptation.

AFFECTED AREA
The affected area (primary design change) is aircraft avionics referring to the integration of the avionic systems on cockpit instrument panel: AFCS, VMS, MFD, ISIS, ADU and AHRS.
Installation of the avionic equipment includes the display of the information (vehicle parameters, engine parameters and piloting parameters, AFCS modes and upper modes as an option) through:

- MFD on instrument panel (part of the FDS integration),
- EID on instrument panel (part of the VMS integration),
- ISIS on instrument panel (part of the sensors integration).

For this affected area, CS29 Amendment 2, dated 17 November 2008, is applicable and the requirements impacted by are listed below (see reference CRI A-01):

- CS29.0771 Pilot compartment
- CS29.0773 Pilot compartment view
- CS29.0777 Cockpit controls
- CS29.1301 Function and installation
- CS29.1303 Flight and navigation instruments
- CS29.1305 Power plant instruments
- CS29.1309 Equipment, systems, and installations
- CS29.1321 Arrangement and visibility
- CS29.1327 Magnetic direction indicator
- CS29.1329 Automatic pilot system
- CS29.1333 Instrument systems
- CS29.1335 Flight director systems
- CS29.1543 Instrument markings: general
- CS29.1545 Airspeed indicator
- CS29.1547 Magnetic direction indicator
- CS29.1549 Powerplant instruments

Appendix B Airworthiness Criteria For Helicopter Instrument Flight

Special Condition:
- Minimum in flight experience (CRI B-01)
- Search and Rescue system (CRI B-02)
- Protection from the effects of High Intensity Radiated Fields (HIRF) (CRI F-02)

Equivalent Safety Finding:
- IFR Static Longitudinal Stability – Airspeed Stability (CRI B-04)
- VNE aural warning (CRI F-01)
- Airspeed indicator markings (CRI G-01)
- Powerplant instrument markings (CRI G-02)

SECONDARY CHANGE
To integrate these systems on Super Puma MK1 AS332 C1,L1, some secondary changes have to be applied:

- Electrical integration of the avionic systems,
- Mechanical integration of the avionic systems,
- Adaptation of hydraulic and flight controls systems,
- AFCS modifications,
- Cockpit lighting modifications,
- Other structural modifications of the airframe,
- Warnings and cautions modifications.
For these secondary changes, the certification basis to be applied is the existing certification basis for the AS332C1,L1. Nevertheless, Eurocopter has elected to comply with the requirements of affected area, completed by the ones of CS29 Amdt 2 listed below.

Requirements elected to comply:
- CS29.0161 Trim control
- CS29.0671 General
- CS29.0672 Stability augmentation, automatic, and power-operated systems
- CS29.1322 Warning, caution, and advisory lights
- CS29.1381 Instrument lights
- CS29.1523 Minimum flight crew
- CS29.1525 Kinds of operation

UNAFFECTED AREA
The existing certification basis (FAR29 amendment 16 and DGAC special conditions) as listed on EASA.TCDS.R.002 is applicable.
SECTION 3: AS 332 L2

I. General

1. Type/ Variant or Model
   1.1 Type          AS 332
   1.2 Variant       AS 332 L2

2. Airworthiness Category                     Large Rotorcraft, Category A and B

3. Manufacturer
   before January 1, 1992: AEROSPATIALE
   after  January 1, 1992: Eurocopter
   after  January 7, 2014: Airbus Helicopters
   Aeroport International Marseille-Provence
   13725 MARIGNANE cedex - France

4. EASA Certification Application Date        3 March 1986 (to DGAC-F)

5. National Certifying Authority              DGAC-F

6. National Authority TC Date                 12 June 1991
   (DGAC-F National TC No. 56)

II. Certification Basis                      according to DGAC letters 53445/SFACT/TC dated 27
                                             April 1989 and 53610/SFACT/N.HE dated June 1991

1. Reference Date for determining the        see Application Date
   applicable requirements

2. Airworthiness Requirements                 FAR 29 with amendments 29-1 to 29-24 inclusive

3. Special Conditions
   - Flight Endurance
   - Bird and Foreign Object strikes
   - Protection against external electro-magnetic disturbances
   - 30 Sec and 2 Min contingency ratings
   - Maintenance assistance system (not applicable to basic type design definition)
4. Exemptions

None

5. Deviations

- reversion to FAR 29 original requirements for § 29.1, 29.605, 29.671 and 29.1323
- reversion to FAR 29 amendment 12 for § 29.603
- reversion to FAR 29 amendment 14 for § 29.1303
- reversion to FAR 29 amendment 14 for § 29.1309 regarding equipment used on previous AS 332 versions

6. Equivalent Safety Findings

None

7. Requirements elected to comply

None

8. Environmental Protection Requirements

8.1 Noise 
Compliant with ICAO Annex 16, Volume 1, Part II, Chapter 8 and Apdx 4; see Flight Manual for measured noise levels

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

documents ref. 332 A 89 1031 and 332 A 89 1046

2. Description

Large twin-engine helicopter; designed as derivative product of former AS332 models

3. Equipment

As per compliance with applicable FAR 29 airworthiness requirements and referenced within approved Flight Manual

4. Dimensions

4.1 Fuselage
Length 16,49m
Width 3,38m
Height 4,97m

4.2 Main Rotor
4 blades Diameter 16,20m

4.3 Tail Rotor
4 blades Diameter 3,15m

5. Engine

5.1 Model
2 Turboméca Makila 1A2
5.2 Type Certificate

EASA engine TCDS No: E.072

5.3 Limitations

5.3.1 Installed Engine Limits
Refer to approved Flight Manual

5.3.2 Transmission Torque Limits
Refer to approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel
Refer to approved Flight Manual

6.2 Oil
Refer to approved Flight Manual

6.3 Additives
Refer to approved Flight Manual

7. Fluid capacities

7.1 Fuel

standard configuration: 2.043 l (540 US gals)
with optional internal 6th tank: 324 l (86 US gals)
with optional sponson tanks 600 l (158 US gals)
Total available: 2.967 l (784 US gals)

see Flight Manual for other approved optional fuel tanks configurations
and for unusable fuel quantities.

7.2 Oil

Engines 2 x 4.9 l
MGB 24 l
IGB 0.75 l
TGB 1.50 l

8. Air Speeds Limits

Vne Power On: 315 km/h (170kt)
Vne Power Off: 278 km/h (150kt)

see flight manual for other approved airspeed limits.

9. Rotor Speed Limits

Power On:
maximum 275 rpm
Nominal 265 rpm
Minimum 245 rpm
Min Transient 220 rpm

Power Off:
Max Transient 310 rpm (20 sec)
Maximum 290 rpm
Minimum 245 rpm (IAS > 100kt)
220 rpm (IAS < 100kt)
10. Maximum Operating Altitude and Temperature

10.1 Altitude

Take-off and landing
- 2,000ft pressure altitude
+ 7,200ft density altitude

En route
- 2,000ft pressure altitude
+ 20,000ft pressure altitude

10.2 Temperature

-30°C to ISA + 35°C limited to 50°C

11. Operating Limitations

VFR day and night
IFR day and night
Non-icing conditions

Flight in limited icing conditions is permitted when equipment items listed in relevant approved Flight Manual supplements are installed (see Note 5)

12. Maximum Masses

Take-off and landing: 9300kg (20,502lb)

13. Centre of Gravity Range

Refer to approved Rotorcraft Flight Manual

14. Datum

Longitudinal 4,67m (183ft 4in) forward of main rotor centreline

Lateral aircraft symmetry plane

15. Levelling Means

Levelling plate on right side of the fuselage and graduated plate for plumb line on left side

16. Minimum Flight Crew

VFR: 1 pilot
IFR: 2 pilots

17. Maximum Passenger Seating Capacity

25

18. Passenger Emergency Exit

Refer to approved Flight Manual

19. Maximum Baggage/ Cargo Loads

the cabin floor (from +2,48m to +7,63m) is provided with the structural strength required for a load of 800kg/m² evenly distributed in cargo configuration
20. Rotor Blade control movement
For rigging information, refer to AMM

21. Auxiliary Power Unit (APU)
Optional; to be used on ground only
see relevant approved Flight Manual Supplement

IV. Operating and Service Instructions

1. Flight Manual
AS 332 L2 Flight Manual, DGAC-F (*)
approved on 02 April 1992 or subsequent
DGAC-F or EASA approved revisions.

(*) there are other Flight Manuals, which resulted from various European
type certifications, e.g. Flight Manual with identification code E (CAA-UK).

Airworthiness Limitations:
AS 332L2 Maintenance Servicing
Recommendations, Chapter 05.99
approved by DGAC-F or EASA or Master
Servicing Manual Chapter 04 approved
by EASA

Maintenance Programme:
- AS 332 L2 Maintenance Servicing
  Recommendations (PRE),
- AS 332 L2 Aircraft Maintenance
  Manual (AMM)
- others: AS 332 L2 Overhaul Manual,
  Repair Manual, IPC

3. Service Letters and Service Bulletins
As published by Aérospatiale or
Eurocopter or Airbus helicopters and
approved by DGAC-F or Eurocopter DOA
or Airbus helicopters DOA

4. Required Equipment
- As per compliance with applicable FAR 29 requirements and
  in accordance with the original Type Design standard;
- Refer to approved Flight Manual, MMEL and Note 6 below.

5. Master Minimum Equipment List
AS 332 L2 approved MMEL

V. Notes

1. Eligible serial numbers: 2338 and subsequent of AS 332 L2 model.
2. The certified “optional” installations are each approved independently of the basic helicopter and an approved Flight Manual Supplement is associated to each optional installation if necessary.

3. Cabin Interior and Seating Configurations must be approved.


5. Flight in “icing conditions of limited severity”:
   - permitted with relevant Flight Manual Supplement, formerly approved under code E (CAA-UK) at normal revision RN0, or subsequent EASA approved issues;
   - such code E (CAA-UK) Flight Manual Supplement does not constitute operational approval and operations must be conducted in accordance with applicable operational regulation.

6. The AS 332 L2 helicopters without MGB fire detection system are those modified by AMS 07-25208, design change resulting from CAA-UK’s original type certification.
SECTION 4: EC 225 LP

I. General

1. Type/ Variant or Model
   EC 225 LP

2. Airworthiness Category
   Large Rotorcraft, Category A and B
   (see Note 6)

3. Manufacturer
   Before January 7, 2014: Eurocopter
   After January 7, 2014: Airbus Helicopters
   Aeroport International Marseille-Provence
   13725 MARIGNANE cedex - France

4. EASA Certification Application Date
   7 November 2000 (to DGAC-F)

5. National Certifying Authority
   EASA

6. National Authority TC Date
   27 July 2004

II. Certification Basis

1. Reference Date for determining the applicable requirements
   See Application Date

2. Airworthiness Requirements
   JAR 29, Change 1 effective December 1\(^{st}\), 1999, except for the following:

3. Special Conditions
   - Minimum in flight experience (Reference CRI B-01)
   - SAR (Search and Rescue) system (Reference CRI B-02)
   - Water Bombing System (Reference CRI B-05)
   - External loads, JAR 29.865 amd. 2 (Reference CRI D-06)
   - Protection from the effects of High Intensity Radiated Field (Reference CRI F-02)
   - Helicopter limited icing approval (Reference CRI O-01)

4. Exemptions
   - JAR 29.562 Emergency dynamic landing conditions (Reference CRI C-02)
   - JAR 29.952(a)(c)(d)(e)(f)(g) Fuel system crash resistance (Reference CRI E-01)
   - JAR 29.955(b) Fuel transfer (Reference CRI E-05)
5. Deviations

5.1 reversion to FAR 29, Amendment 24 as follows:
- FAR 29.561(b)(3) Emergency landing conditions-general (Reference CRI C-01)

5.2 partial reversions to FAR 29, Amendment 24 as follows:
- FAR 29.571 Fatigue evaluation of structure (Reference CRI C-03)
- FAR 29.785 Seat, berth, safety belts, and harnesses (Reference CRI D-01)

5.3 - JAR 29.785(a), Installation of side-facing seats (Reference CRI D-09)

5.4 - JAR 29.562(a), Installation of side-facing seats (Reference CRI D-09)

6. Equivalent Safety Findings

- JAR 29.173, 175 Static longitudinal Stability (Reference CRI B-03)
- JAR 29 App B §IV IFR Static longitudinal Stability – Airspeed stability (Reference CRI B 04)
- JAR 29.571 Fatigue evaluation of structure for changed metallic PSE (Reference CRI C-04)
- JAR 29.807(c)(1) Passenger emergency exits other than side-of-fuselage (Reference CRI D-02)
- JAR 29.813(a), 29.815 Emergency exit access - Main aisle width (Reference CRI D-03)
- JAR 29.807(d)(2) Ditching emergency exits for passengers (Reference CRI D-07)
- JAR 29.923(a)(2) Rotor drive system and control mechanism tests (Reference CRI E-03)
- JAR 29.1303(j) VNE aural warning (Reference CRI F-01)
- JAR 29.1545(b)(4) Airspeed indicators markings (Reference CRI G-01)
- JAR 29.1549(b) Powerplant instruments markings (Reference CRI G-02)

7. Requirements elected to comply
- CS29.1465 Amdt.3 - Vibration Health Monitoring for Airworthiness Credit (Reference CRI F-09) – See Note 7.

8. Environmental Protection
Requirements

8.1 Noise  Compliant with ICAO Annex 16, Volume 1, Part II, Chapter 8 and Appendix 4 (Reference CRI A-03) – see Flight Manual for measured noise levels

8.2 Emission  Compliant with ICAO Annex 16 Volume 2 - Fuel Discharge (Reference CRI A-04)

III. Technical Characteristics and Operational Limitations

1. Type Design Definition
   1.1 EC 225 LP Standard:  document ref. 332 A 89 2120
   1.2 EC 225 LP MPAI (*) equipped:  when standard definition is completed with design change ref. AMS OP 23554
   (*) MPAI means Multi-Purpose Air Intakes

2. Description
   Large twin-engine helicopter; designed as a derivative product of the former type certified AS 332 L2
   Standard configuration consists of grip-type engine air intakes installation, while MPAI configuration is optional and consists of Multi-Purpose Air Intakes

3. Equipment
   As required by JAR 29 and referenced within approved Flight Manual

4. Dimensions
   4.1 Fuselage
      Width  3,96m
      Height  4,97m
   4.2 Main Rotor
      5 blades  Diameter  16,20m
   4.3 Tail Rotor
      4 blades  Diameter  3,15m

5. Engine
   5.1 Model
      2 Turboméca Makila 2A, or
      2 Turboméca Makila 2A1
   5.2 Type Certificate
      EASA engine TCDS No:  E.006
   5.3 Limitations
      5.3.1 Installed Engine Limits
      Refer to approved Flight Manual
5.3.2 Transmission Torque Limits  Refer to approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)
   6.1 Fuel  Refer to approved Flight Manual
   6.2 Oil  Refer to approved Flight Manual
   6.3 Additives  Refer to approved Flight Manual

7. Fluid capacities
   7.1 Fuel
      standard configuration:  2.588 l (682 US gals)
      with optional internal 6th tank:  320 l (  84 US gals)
      Total available:  2.908 l (766 US gals)
      see Flight Manual for other approved optional fuel tanks configurations and for unusable fuel quantities.

   7.2 Oil
      Engines  2 x 4.92 l
      MGB  27 l
      IGB  0.62 l
      TGB  1.50 l

8. Air Speeds Limits
   Vne Power On:  175kt up to 5000 ft density altitude and 175kt – 3kt / 1000ft above 5000 ft
   Vne Power Off:  Vne Power On limited to 150kt
      see flight manual for other approved airspeed limits.

9. Rotor Speed Limits
   Power On:  Maximum  275 rpm
             Minimum  246 rpm
             Min Transient  220 rpm
   Power Off:  Max Transient  310 rpm (20 sec)
              Maximum  290 rpm
              Minimum  246 rpm (IAS > 100kt)
                220 rpm (IAS < 100kt)

10. Maximum Operating Altitude and Temperature
   10.1 Altitude  
      EC 225 LP Standard:  OAT from -45°C to -12°C:
                                – 6.000ft density altitude
EC 225 LP MPAI equipped:

OAT from -12°C to ISA +40°C (without exceeding +50°C):
- 2.000ft pressure altitude
+ 7.400ft density altitude

OAT from -45°C to -12°C:
- 6.000ft density altitude
+ 11.000ft density altitude

En route

OAT from -45°C to -12°C:
- 6.000ft density altitude
+ 20.000ft pressure altitude

OAT from -12°C to ISA +40°C (without exceeding +50°C):
- 2.000ft pressure altitude
+ 11.000ft density altitude

10.2 Temperature

EC 225 LP Standard / MPAI equipped:
- 30°C to ISA + 40°C limited to 50°C.

See Flight Manual Supplement SUPP 2 for lower temperature operation down to -45°C.

11. Operating Limitations

VFR day and night
IFR day and night
Non-icing conditions

Flight in full icing conditions is permitted only when other equipment items as listed in relevant approved Flight Manual supplement are installed.

Flight in limited icing conditions is permitted only when equipment items listed in relevant approved Flight Manual supplements are installed (see Note 5).

12. Maximum Masses

Take-off and landing: 11.000kg (24.251lb)

13. Centre of Gravity Range

Refer to approved Rotorcraft Flight Manual

14. Datum

Longitudinal 4,67m (183.85in) forward of main rotor centreline

Lateral aircraft symmetry plane

15. Levelling Means

Levelling plate on right side of the
fuselage and graduated plate for plumb line on left side

16. Minimum Flight Crew
   VFR: 1 pilot
   IFR: 2 pilots; Pilot and suitably trained crew member in day VFR for water bombing operations.

17. Maximum Passenger Seating Capacity
   25

18. Passenger Emergency Exit
   one (1) door whose dimensions exceed those of Type II exit + two (2) Type IV exits on each side

19. Maximum Baggage/ Cargo Loads
   the cabin floor (from + 2.48 m to + 7.63 m) is provided with the structural strength required for a load of 800kg/m² evenly distributed in cargo configuration

20. Rotor Blade control movement
   For rigging information, refer to AMM

21. Auxiliary Power Unit (APU)
   Optional; to be used on ground only - see relevant approved Flight Manual Supplement

22. Wheels and Tyres
   Tyres: nose: 466 x 173-10
           main: 615 x 225-10
   Wheels: nose: Messier Bugatti C 20525 000
           main: Messier Bugatti C 20147 200

IV. Operating and Service Instructions

1. Flight Manual
   EC 225 LP Standard: EC 225LP Flight Manual, normal revision RN0 (04-20), EASA approved on 27 July 2004 or subsequent approved revisions
   EC 225 LP MPAI equipped: EC 225LP MPAI Flight Manual, normal revision RN2 (04-44), EASA approved on 21 December 2004 or subsequent approved revisions

Airworthiness Limitations: EC 225 LP Maintenance Servicing
Recommendations, Chapter 05.99 (or newly chapter 04 approved by EASA),
edition 2004.05.31, Rev. 000, EASA approved on 27 July 2004 or subsequent approved revisions

Maintenance Programme:
- EC 225 LP Maintenance Servicing Recommendations (PRE),
- EC 225 LP Aircraft Maintenance Manual (AMM)

3. Service Letters and Service Bulletins

As published by Eurocopter or Airbus Helicopters and approved by Eurocopter DOA or Airbus Helicopters DOA

4. Required Equipment

- As per compliance with applicable JAR 29 requirements and in accordance with the original Type Design standard;
- Refer to approved Flight Manual and MMEL.

5. Master Minimum Equipment List

EC225LP approved MMEL

V. Notes

1. Eligible serial numbers: 2600 and subsequent of EC 225 LP model.

2. The certified “optional” installations are each approved independently of the basic helicopter and an approved Flight Manual Supplement is associated to each optional installation if necessary (some optional installations are specific to the EC 225 LP equipped with MPAI and the relevant Flight Manual Supplements are approved for that particular EC 225 LP type design definition only).

3. Cabin Interior and Seating Configurations must be approved; passenger transport is not permitted in both operational and non-operational configurations of the Water Bombing System; except while performing Water Bombing operations, the EC 225 LP is not approved for the carriage of cargo only in the cabin.

4. Commercial designation: SUPER PUMA Mk II+ or LP corresponds to EC 225 LP model.

5. Flight in limited icing conditions and water bombing operations: the relevant approved Flight Manual Supplements do not constitute operational clearance approvals and operations must be conducted in accordance with applicable operational regulation.
6. The EC 225 LP is certified as Category A rotorcraft with operating limitations as defined in the relevant approved Flight Manual Supplements.

7. For EC 225 LP helicopters equipped with M’ARMS (optional Vibration Health Monitoring system), the associated mandatory design change MOD 0726978 / 0726994 (defined as “M’ARMS MOD45 monitoring”) is certified in compliance with CS29.1465 of CS29 Amdt.3 – see above Section II. Certification Basis, Paragraph 7. Requirement elected to comply.
SECTION ADMINISTRATIVE

I. Acronyms and Abbreviations

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<td>Aircraft Maintenance Manual</td>
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<td>APU</td>
<td>Auxiliary Power Unit</td>
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<td>DOA</td>
<td>Design Organisation Approval</td>
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<td>EASA</td>
<td>European Aviation Safety Agency</td>
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<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
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<tr>
<td>HIRF</td>
<td>High Intensity Radiated Field</td>
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<td>ICAO</td>
<td>International Civil Aviation Organisation</td>
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<td>IPC</td>
<td>Illustrated Parts Catalogue</td>
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<td>JAA</td>
<td>Joint Aviation Authorities</td>
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<td>JAR</td>
<td>Joint Airworthiness Requirements</td>
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<tr>
<td>kg</td>
<td>Kilogram</td>
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<tr>
<td>KIAS</td>
<td>Knots Indicated Air Speed</td>
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<tr>
<td>lb.</td>
<td>Pounds</td>
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<tr>
<td>M’ARMS</td>
<td>EC225’s Vibration Health Monitoring system</td>
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<td>MMEL</td>
<td>Master Minimum Equipment List</td>
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<tr>
<td>RFM</td>
<td>Rotorcraft Flight Manual</td>
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<td>RIPS</td>
<td>Rotorcraft Icing Protection System</td>
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<td>TSO</td>
<td>Technical Standards Order</td>
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II. Type Certificate Holder Record

Airbus Helicopters
Aeroport International Marseille-Provence
13725 MARIGNANE cedex - France

III. TCDS Change Record

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<td>Issue 01</td>
<td>27 July 2004</td>
<td>Initial Issue; EC225LP model type certification</td>
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<tr>
<td>Issue 02</td>
<td>21 April 2006</td>
<td>Legacy Models added (SA330 and AS332)</td>
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<tr>
<td>Issue 03</td>
<td>06 October 2009</td>
<td>EC225LP: Makila 2A1 engines added; update of altitude and temperature limitations</td>
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<tr>
<td>Issue 04</td>
<td>13 December 2009</td>
<td>TC surrendering for SA330 models F and G; EC 225 LP certification basis update for Water Bombing kit approval</td>
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<tr>
<td>Issue 05</td>
<td>25 February 2010</td>
<td>Clarification of S/N applicability for former SA330F and G models converted into SA330J</td>
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<tr>
<td>Issue 06</td>
<td>09 May 2010</td>
<td>Extended EC 225 LP take-off and landing altitude flight envelope</td>
</tr>
<tr>
<td>Issue 07</td>
<td>04 January 2011</td>
<td>Extended EC225LP temperature envelope (very cold weather); errors correction on AS332 L2 hydraulic fluid capacity; new EC225LP icing envelope approval</td>
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<tr>
<td>Issue 08</td>
<td>20 January 2011</td>
<td>Update on EASA engine TCDS E.072 reference</td>
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<tr>
<td>Issue 09</td>
<td>14 June 2012</td>
<td>Updated to add AS332L1 with AHCAS commercial designation AS332L1e</td>
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<td>Issue 10</td>
<td>29 June 2012</td>
<td>TCDS format update; minor corrections</td>
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<td>10 July 2013</td>
<td>EC225LP certification basis update for “M’ARMS MOD45 monitoring” approval</td>
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<td>Issue 12</td>
<td>07 January 2014</td>
<td>TC Holder’s name changed as “Airbus Helicopters”</td>
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<tr>
<td>Issue 13</td>
<td></td>
<td>Updated to add AS332C1 with AHCAS commercial designation AS332C1e, new EC225 CRI D-09 and new MSM Chapter 04 (previously 05.99).</td>
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