TYPE CERTIFICATE DATA SHEET

No. EASA.R.150

for

EC 175

Type Certificate Holder

Airbus Helicopters

Aéroport International Marseille – Provence
13725 Marignane CEDEX
France

For Model: EC 175 B

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SECTION 1: EC 175 B

I. General

1.	Type/ Model/ Variant	
	1.1 Type	EC 175
	1.2 Model	EC 175 B
	1.3 Variant	- - -
2.	Airworthiness Category	Large Rotorcraft, Category A and B
3.	Manufacturer	Airbus Helicopters Aéroport International Marseille – Provence 13725 Marignane CEDEX, France
4.	Type Certification Application Date	15 February 2007
5.	State of Design Authority	EASA
6.	Type Certificate Date	30 January 2014

II. Certification Basis

1.	Reference Date for determining the applicable requirements	1 March 2009 (CRI A-01)
2.	Airworthiness Requirements	CS 29, Amdt. 2 – Large Rotorcraft (EASA Decision 2008/010/R)
3.	Special Conditions	- Extended Take-Off Power Duration (CRI E-01) - HIRF Protection (CRI F-01) - SAR Modes certification (CRI B-02), see Note 8 - Helicopter Limited Icing Approval (CRI F-30), see Note 9
4.	Exemptions	none
5.	Deviations	ADS-B Out Extended Squitter & EHS Installation with Transponder TDR-94D equipment (CRI F-32), see Note 7 Fuel system crash resistance with optional cargo sling (CRI E-08), see Note 13

6. Equivalent Safety Findings
   - Fatigue evaluation of structure (CRI C-02)
   - Fire in cargo and baggage compartments (CRI D-04)
   - Main aisle width (CRI D-05)
   - Passenger emergency exits other than side of fuselage (CRI D-06)
   - Ditching emergency exits (CRI D-07)
   - Passenger emergency exit access (CRI D-10)
   - Emergency exit marking (CRI D-12)
   - Fire detector electrical circuit testability in flight (CRI E-07)
   - Cigalhe system: part time display of vehicle parameters (CRI F-03)
   - Independent power source for stand-by attitude indicator (CRI F-04), see Note 14
   - Airspeed and powerplant indicators green arc (CRI G-01)
   - Powerplant instruments marking during Engine training mode (CRI G-03)
   - Hoist Installation (CRI D-14)
   - Green running man emergency exit pictogram (CRI D-15)

7. Requirements elected to comply
   - Noise requirements as defined in II.8.1 below;
   - CS-ACNS, Initial Issue, dated 17 December 2013, Subpart A and D.

8. Environmental Protection Requirements

8.1 Noise Requirements	ICAO Annex 16, Volume I, Part II, Amdt. 10, Chapter 8 (EASA CS-36, Amdt. 3) ICAO Annex 16, Volume I, Part II, Amdt. 11B, Chapter 8 (EASA CS-36, Amdt. 4), see Note 15. For details see EASA Type Certificate Data Sheet for Noise TCDSN EASA.R.150.
8.2 Emission Requirements	Fuel venting: ICAO Annex 16, Volume II, Part II, Chapter 2 (CS-34)
9. Operational Suitability Data (OSD)	see SECTION 2 below

III. Technical Characteristics and Operational Limitations

1. Type Design Definition	Basic Helicopter: TNM000A1517E99/D Optional installations: TNM000A2544E99/D
2. Description	Large twin-engine passenger transport helicopter category A and B Main rotor: Spheriflex, 5 blades Tail rotor: Spheriflex, 3 blades Landing gear: tricycle retractable Powerplant: 2 independent turbines
3. Equipment	As required by compliance with the Certification Basis and listed in the Type Design Definition documents
4. Dimensions	
4.1 Fuselage	Length: 15.68 m Width: 3.35 m Height: 4.84 m
4.2 Main Rotor	Diameter: 14.80 m
4.3 Tail Rotor	Diameter: 3.20 m
5. Engine	
5.1 Model	Pratt & Whitney Canada 2 x Model PT6C-67E
5.2 Type Certificate	EASA TC/TCDS n°: EASA.IM.E.022
5.3 Limitations	

5.3.1 Installed Engine Limitations and Transmission Limits

5.3.1.1 All Engines Operative (AEO) limits

	N1 [% (rpm)]	TOT [°C]	TQ [%]
Max Transient PWR (20 sec)	105.4 (39 500)	820	only allowed up to V_y 2 x 110
Max TOP (5 min)	104.6 (39 200)	815	only allowed up to V_y 2 x 100
MCP (unlimited)	102.7 (38 500)	775	2 x 93.2
Extended PWR (30 min continuous, 50 min cumulated/flight)	104.6 (39 200)	815	2 x 100

5.3.1.2 One Engine Inoperative (OEI) limits

	N1 [% (rpm)]	TOT [°C]	TQ [%]
Overshoot	---	---	165.7
OEI HI (30 sec)	111 (41 600)	915	153.4
OEI LO (2 min)	108 (40 500)	865	136.4
OEI CT (unlimited)	105.4 (39 500)	820	119.3

5.3.1.3 Other Engine limits: Refer to approved RFM

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

Types of fuel	NATO Code	Specifications			
		USA	UK	France	Other
Kerosene-50 (AVTUR FSII) **JP-8** [-45°C< Tp <+55°C]	F34	MIL-DTL 83133	DEF.STAN. 91-87	DCSEA 134	STANAG 3747
Kerosene 50 (AVTUR) **JET-A1** [-45°C< Tp <+55°C]	F35	ASTM-D-1655 MIL-DTL 83133	DEF.STAN. 91-91	DCSEA 134	STANAG 3747 / GOST R 52050-2006
High Flash Point (AVCAT FSII) **JP-5** [-45°C< Tp <+55°C]	F44	MIL-DTL 5624	DEF.STAN. 91-86	DCSEA 144	- - -

Note: For alternative authorized fuel and authorised additives refer to approved RFM

6.2 Oil

6.2.1 Engine lubricants

Types of oil	NATO Code	Specifications
Synthetic 3 cSt oils (restricted use)	- - -	MIL-PRF-7808L Type I (3cSt)
Average synthetic 5 cSt	0-156 Normal	MIL-PRF-23699F Type II (5cSt)

Note: For further details refer to approved RFM

6.2.2 MGB, IGB and TGB lubricants

Types of oil	Conditions	Specifications		
		USA	UK	France
NATO O-155 mineral oil, 8 cSt	OAT > – 20°C	MIL.L 6086.D	DTD 581 C OEP .70	AIR 3525
			Foaming index 20-0 ml max at 93°C	
NATO O-155 mineral oil, 8 cSt	OAT > -25°C	MIL.L 6086.D	DTD 581 C OEP .70	AIR 3525
			Foaming index 20-0 ml max at 93°C	

Note: For further details refer to approved RFM

6.2.3	Hydraulic fluids	MIL-H-83282C or MIL-PRF-83282D (NATO code H-537) only
6.3	Additives	n/a
7.	Fluid capacities	
7.1	Fuel	Standard fuel tank Fuel tank capacity: 2 616 litres Unusable fuel: 17.7 litres
7.2	Oil	Engine (each): 8.0 litres MGB: 21.0 litres IGB: 1.0 litres TGB: 1.5 litres Hydraulic: Main supply I: 5.0 litres Main supply II: 9.0 litres
7.3	Coolant System Capacity	n/a
8.	Air Speed Limitations	$V_{NE\ PWR\ On}$: from -1 500 ft Hp to 3 000 ft Hp: 175 KIAS For reduction of V_{NE} with altitude, refer to approved RFM. $V_{NE\ PWR\ Off}$: $V_{NE\ PWR\ On}$ - 40 KIAS Refer to approved RFM for other speed limitations.
9.	Rotor Speed Limitations	Power on [rpm (%)]: Maximum 298.5 (107) Reference 279.0 (100) Minimum continuous 265.2 (95) Minimum transient AEO and OEI 231.7 (83) Power off [rpm (%)]: Maximum transient (20 s) 326.7 (117) Maximum continuous 307.1 (110) Minimum continuous 244.3 (87.5) Minimum transient 231.7 (83)
10.	Maximum Operating Altitude and Temperature	
10.1	Altitude	For TKOF/LDG: Category A: from -1 500 ft Hp up to +13 000 ft Hσ Category B: from -1 500 ft Hp up to +13 000 ft Hσ For flight: from –1 500 ft Hp to +15 000 ft Hσ
10.2	Temperature	From -40°C to ISA+40°C limited to OAT +50°C For variation of Temperature limitations with altitude, refer to approved RFM and applicable Supplements.
11.	Operating Limitations	VFR day and night IFR Falling and blowing snow (see Note 10) Limited icing conditions (see Note 11)
12.	Maximum Mass	Max gross mass in-flight: 7 500 kg Max gross mass on-ground: 7 550 kg Max gross mass in-flight: 7 800 kg, see Note 12 Max gross mass on-ground: 7 850 kg, see Note 12
13.	Centre of Gravity Range	Refer to approved RFM [Section 2.2] and applicable Supplements (as for Extended Aft Centre of Gravity Envelope and Hoist Installation).
14.	Datum	Longitudinal: the datum plane (STA 0) is located at 7 000 mm forward

of main rotor centre line
Lateral:
fuselage symmetry plane

15. Levelling Means — Levelling reference marking on upper deck on LH side near to frame 4 MGB

16. Minimum Flight Crew — VFR: 1 pilot (right seat)
IFR: 2 pilots

17. Maximum Passenger Seating Capacity — up to 18

See approved RFM for approved seating configuration

18. Passenger Emergency Exit — Basic and Public Services (PS) internal arrangements:

10 exits, of which are -

4 exits on each side of the passenger cabin
1 exit on each side of the cockpit

VIP internal arrangements as defined in the approved EC 175 RFM SUP.57: 6 exits, of which are -
2 exits on each side of the passenger cabin,
1 exit on each side of the cockpit.

19. Maximum Baggage/ Cargo Loads — Cargo floor max load: 300 kg
Cargo floor max unit load: 160 kg/m²

See approved RFM for complementary limitations and specific loading conditions.

20. Rotor Blade Control Movement — For rigging information refer to Maintenance Manual

21. Auxiliary Power Unit (APU) — n/a

22. Life-limited Parts — See approved ALS Chapter 04 of the Maintenance Servicing Manual

23. Wheels and Tyres

	Tyres	Wheels
nose	15x6.00-6	C 20525 000
main	615 x 225-10	C 20147 200

IV. Operating and Service Instructions

1. Flight Manual
- EC 175 B Flight Manual, Normal Revision 0, date code 14-03, approved by EASA on 30 January 2014, or subsequent approved issues;
- EC 175 B Flight Manual for aircraft equipped with the modification 99A03550-00-M-ECP or 99A04155-00-M-ECP ("STP2" variant), Normal Revision 0, date code 15-43 approved by EASA on 18 December 2015, or subsequent approved issues

2. Maintenance Manual
- Airworthiness Limitations as EC 175 Maintenance Servicing Manual, Chapter 04, edition 2014.01.08, Rev. 000, approved by EASA on 30 January 2014, or subsequent approved issues
- Maintenance Servicing Manual EC 175 and Aircraft Maintenance Manual EC 175 as published by Airbus Helicopters

3. Structural Repair Manual — Structural Repair Manual EC 175, as published by Airbus Helicopters

4. Weight and Balance Manual — Section 6 of Complementary Flight Manual EC 175, as published by Airbus Helicopters

5.	Illustrated Parts Catalogue	Illustrated Parts Catalogue EC 175, as published by Airbus Helicopters
6.	Service Letters and Service Bulletins	Service Letters and Service Bulletins EC 175, as published by Airbus Helicopters
7.	Required Equipment	As per compliance with Certification Basis and in accordance with the Type Design Definition. Refer to approved Flight Manual and MMEL.

V. Notes

1. Manufacturer's eligible serial numbers:
s/n 5002, and subsequent.
2. Cabin interior and seating configurations must be approved, if differing from the Type Design Definition.
3. The certified “optional” installations are each approved independently of the basic helicopter and an approved RFM Supplement is associated to each optional installation if necessary.
4. The EC 175 B is certified as Category A rotorcraft with operating limitations as defined in the relevant approved RFM Supplement.
5. The EC 175 B is certified for Ditching with the optional installations and operating procedures as defined in the relevant approved Flight Manual Supplement.
6. Designation: “H175” is the trade name for helicopters of Type Certificate “EC 175 B”
7. Deviation CRI F-32
Deviation “ADS-B Out Extended Squitter & EHS Installation with Transponder TDR-94D equipment” (as per CRI F-32) is only applicable to EC 175 B aircraft equipped with Modifications No. 99A03906-00-M-ECP and 99A03907-00-M-ECP.
8. Special Condition CRI B-02
Special Condition “System Search and Rescue (SAR) modes certification” (as per CRI B-02) is only applicable to EC 175 B aircraft featured with Automatic Flight Control System SAR modes as defined in the approved RFM SUP.5.
9. Special Condition CRI F-30
Special Condition “Helicopter Limited Icing Approval” (as per CRI F-30) is only applicable to EC 175 B aircraft configured as defined in the approved EC 175 RFM SUP.4.
10. The EC 175 B is certified for flight in falling and blowing snow according to the limitations and conditions as defined in the approved RFM SUP.80.
11. The EC 175 B is certified for flight in limited icing conditions according to the limitations and conditions as defined in the approved EC 175 RFM SUP.4.
12. Max gross mass in-flight 7 800 kg, and max gross mass on-ground 7 850 kg are only applicable to EC 175 B rotorcraft equipped with Helionix Step 2+ (Mod. 99A04792-00-M-ECP, or 99A04793-00-M-ECP), or later EASA-approved versions and Avionics Primary Configuration File (PCF) set to 7 850 kg.
Operations in Cold Weather conditions (from -15 ˚C down to -40 ˚C), Category A operations from Ground Helipads (as per RFM SUP. 1) and in the Extended Aft CG Flight Envelope (as per RFM SUP. 2) are limited to 7 500 kg.
Category A operations from Elevated Helipads (as per RFM SUP. 1) are limited to 7 600 kg.
13. Temporary deviation on CS 29.952 Amdt. 2 (as per CRI E-08) is only applicable to EC 175 B aircraft equipped with the optional cargo sling installation as defined in the approved EC 175 RFM SUP.15.
14. Equivalent Safety Finding on “Independent power source for stand-by attitude indicator” superseded by EC 175 B Flight Manual, Normal Revision 10 date code 16-30 and EC 175 B Flight Manual for aircraft equipped with the modification 99A03550-00-M-ECP or 99A04155-00-M-ECP (“STP2” variant), Normal Revision 4 date code 16-30.
15. Elect to comply applicable to Engine Air Particle Separator (EAPS) certification and any later new change affecting noise demonstration.

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SECTION 2: OPERATIONAL SUITABILITY DATA (OSD)

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

I. OSD Certification Basis

I.1 Reference Date for determining the applicable OSD requirements

13 February 2014, Ref. EC 175 ORI 4, Issue 2

I.2 MMEL - Certification Basis

Elected to comply to: CS-MMEL, Initial Issue

I.3 Flight Crew Data - Certification Basis

Elected to comply to: CS-FCD, Initial Issue

II. OSD Elements

II.1 MMEL

Master Minimum Equipment List EC 175 B, Normal Revision 0, Date-code 14-30,
or later EASA-approved revisions

Master Minimum Equipment List EC 175 B for aircraft equipped with the modification 99A03550-00-M-ECP or 99A04155-00-M-ECP ("STP2" variant),
Normal Revision 0, Date-code 16-04, or later EASA-approved revisions

II.2 Flight Crew Data

Flight Crew Data for EC 175, Normal Revision 0, dated 24 September 2015, or later EASA-approved revisions

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SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

AEO	All Engines Operative	MCP	Maximum Continuous Power
C.G.	Centre of Gravity	min	Minute
CG_x	Centre of Gravity on the x-axis	MMEL	Master Minimum Equipment List
CG_y	Centre of Gravity on the y-axis	OAT	Outside ne Engine Inoperative
CRI	Certification Review Item	OEI	One Engine Inoperative
CS	Certification Specification	OSD	Operational Suitability Data
cSt	Centistoke	PS	Public Services
Hp	Pressure altitude	PWR	Power
Hσ	Density Altitude	RFM	Rotorcraft Flight Manual
FCD	Flight Crew Data	s/n	Serial Number
HIRF	High Intensity Radiated Field	sec	Seconds
IFR	Instrumental Flight Rules	STA	Station
ISA	Internat. Standard Atmosphere	TKOF	Take-off
KIAS	Knots Indicated Air Speed	TOP	Take-off Power
LDG	Landing	VFR	Visual Flight Rules
LH	Left Hand	V_{NE}	Never Exceed Speed
Max	Maximum	$V_{NE\ PWR\ On}$	Never Exceed Speed Power On

II. Type Certificate Holder Record

Type Certificate Holder	**Period**
Airbus Helicopters Aéroport International Marseille – Provence 13725 Marignane CEDEX, France	since 30 January 2014

III. Change Record

Issue	**Date**	**Changes**	**TC issue**
Issue 1	5 Feb 2014	Initial issue	Initial Issue, 30 January 2014
Issue 2	18 Dec 2015	Operating Temperature and Altitude extension; Aft Longitudinal C.G. limits extension; RFM for Helionix Step 2/2R configurations; Operational Suitability Data added; Trade name added.	- - -
Issue 3	30 Jan 2017	SAR Modes; Limited Icing; Falling and blowing snow; Extended MTOW 7.8 t; ADS-B Out Extended Squitter & EHS Installation with Transponder TDR-94D equipment; Hoist Installation; VIP internal arrangements; Operational Suitability Data update.	- - -
Issue 4	23 Apr 2018	Deviations: CRI E08: new Equivalent Safety Finding: CRI F-04: superseded, CRI D-15: new Noise requirements: Elect to comply with latest requirements New PS cabin configurations affecting: Max Passenger Seating Capacity, Passenger Emergency Exit, and, Max Baggage/Cargo Loads. Notes: Note 12: update, Notes 13 to 15: new	- - -

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