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# TYPE CERTIFICATE DATA SHEET

No. EASA.R.114

**for**

AB212 / AB412 Series

**Type Certificate Holder**

Leonardo S.p.A.

Helicopters

Piazza Monte Grappa, 4

00195 Roma

Italy

For Models: AB212  
AB412, AB412 EP



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**SECTION 1: AB212**I. General

1. Type/ Model/ Variant	
1.1 Type	AB212
1.2 Model	AB212
1.3 Variant	---
2. Airworthiness Category	Large Rotorcraft, Cat B
3. Manufacturer	see "Section: Notes (Pertinent to all models)", Note 3
4. Type Certification Application Date to RAI	27 April 1970
5. State of Design Authority	EASA (pre EASA: RAI/ENAC, Italy)
6. Type Certificate Date by RAI	16 February 1976
7. Type Certificate n° by RAI	A 375
8. Type Certificate Data Sheet n° by RAI	SO/A 157
9. EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 1 <sup>st</sup> bullet.

II. Certification Basis

1. Reference Date for determining the applicable requirements	27 April 1970
2. Airworthiness Requirements	FAR Part 29, dated 1 February 1965 Amdt. 29-1, 29-2 and FAR 29.473, 29.501, 29.771, 29.903(c), 29.1323, 29.1505(b) of Amdt. 29-3. IFR Requirements n° SW-216 dated 1 July 1970. For the ditching conditions FAR 29.801 and 29.1415. For the engine: FAA Type Certificate E22EA and TCCA TCDS E-10
3. Special Conditions	FAA Special Condition 29-12-SW-1
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 EASA.R.114
8.2 Emission 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 CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).



III. Technical Characteristics and Operational Limitations

1. Type Design Definition Type Design Definition Doc. 212G0000X001 Issue A and subsequent approved revisions
2. Description Large twin-engine helicopter, two metallic blades, the main rotor is two-bladed semi-rigid teetering type. The tail rotor is a semi-rigid type twin bladed. Skid type landing gear.  
The helicopter has seating provisions for fourteen passengers and one pilot or thirteen passengers and a crew of two.
3. Equipment Basic equipment required by the airworthiness rules (see Certification Basis) shall be installed on the helicopter for the Airworthiness Certificate release.  
Approved mandatory and optional equipment are listed in report 212-00-47 "Equipment List".  
Refer also to the Equipment list in RFM.
4. Dimensions
  - 4.1 Fuselage
 

Length:	12.70 m
Width stabiliser:	2.64 m
Height:	3.08 m
  - 4.2 Main Rotor Diameter: 14.63 m
  - 4.3 Tail Rotor Diameter: 2.59 m
5. Engine
  - 5.1 Model Pratt and Whitney Canada Corporation  
PT6T-3 or PT6T-3B Twin Power Section Turboshaft
  - 5.2 Type Certificate
 

TCCA TC/TCDS n°:	E-10
FAA TC/TCDS n°:	E22EA
EASA TC/TCDS n°:	EASA.IM.E.059
  - 5.3 Limitations
    - 5.3.1 Installed Engine Limits Sea level static / standard day  
  
With Pratt&Whitney PT6T-3 or PT6T-3B engine:
 

AEO: Take-Off (5 min)	1 800 shp
AEO: Max Continuous	1 600 shp
OEI: (2-½ min)	1 025 shp
OEI: (30 min)	970 shp
    - 5.3.2 Transmission Torque Limits Refer to approved RFM
6. Fluids (Fuel/ Oil/ Additives)
  - 6.1 Fuel Avjet type fuels conforming to ASTM D-1655, type A, A-1, B; or MIL-T-5624, Grade JP-4 (NATO F-40) or JP-5 (NATO F-44).  
For detailed information see approved RFM Section 1.
  - 6.2 Oil
 

Engine:	MIL-L-7808, MIL-L-23699.
Transmission:	MIL-L-7808, MIL-L-23699.

 For detailed information see approved RFM Section 1.
  - 6.3 Additives n/a



## 7. Fluid capacities

## 7.1 Fuel

Fuel tank capacity: 832 litres (220 US gal)  
at STA 3 891 mm (153.2 in)  
Usable fuel: 821 litres (217 US gal)  
Five interconnected fuel cells.

## 7.2 Oil

Engines:  
6 litres (1.6 US gal) each, at STA 4 646 mm (182.9 in)  
Usable: 2.8 litres (0.75 US gal)  
Total capacity: 12 litres (3.2 US gal), at STA  
4 646 mm (182.9 in)

Engine combining gearbox:

4.7 litres (1.25 US gal)

Transmission: 10.4 litres (2.75 US gal)

Intermediate (42°) gearbox:

0.19 litre (0.2 US quart)

Tail rotor gearbox (90°):

0.38 litre (0.4 US quart)

## 7.3 Coolant System Capacity

n/a

## 8. Air Speeds Limits

For helicopters up to s/n 5568:

$V_{NE VFR}$ : 130 KIAS, gross weight 3 400 kg (7 500 lb)

$V_{NE VFR}$ : 100 KIAS, gross weight 5 080 kg (11 200 lb)

For detailed information see approved RFM Section 1.

For helicopters s/n 5569 and subsequent:

$V_{MIN IFR}$ : 40 KIAS

The  $V_{NE}$  for IFR or VFR with C.G. between 3 353 mm (132 in) and 3 620 mm (142.5 in) is limited to 120 KIAS for a total weight till 3 990 kg (8 800 lb), with a linear reduction until to 100 KIASs for a total weight of 5 080 kg (11 200 lb).

Decrease  $V_{NE}$  3 kts per 1 000 ft above 3 000 feet DA.

The  $V_{NE}$  for VFR only with C.G. between 3 620 mm (142.5 in) and 3 658 mm (144 in) is limited to 110 KIAS for a total weight till 4 540 kg (10 000 lb), with a linear reduction until to 100 KIAS for a total weight of 5 080 kg (11 200 lb).

Decrease  $V_{NE}$  3 kts per 1 000 ft above 3 000 ft DA.

For detailed information see approved RFM Section 1.

## 9. Rotor Speed Limits

Power on:

Maximum 100%  $N_r$  (324 rpm)

Minimum 97%  $N_r$  (314 rpm)

Power off:

Maximum 104.5%  $N_r$  (339 rpm)

Minimum 91%  $N_r$  (294 rpm)

## 10. Maximum Operating Altitude and Temperature

## 10.1 Altitude

Maximum 6 100 m (20 000 ft) PA

## 10.2 Temperature

Refer to approved RFM



- |                                        |                                                                                                                                                                                                                                                                                               |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11. Operating Limitations              | For helicopters up to s/n 5568:<br>VFR day and night,<br>Non-icing conditions<br>For helicopters s/n 5569 and subsequent:<br>VFR day and night,<br>IFR,<br>Non-icing conditions.<br>For additional limitations for take-off and landing see approved RFM Section 1.                           |
| 12. Maximum Weight                     | Max gross weight 5 080 kg (11 200 lb)                                                                                                                                                                                                                                                         |
| 13. Centre of Gravity Range            | Refer to approved RFM Section 1 for C.G. envelope                                                                                                                                                                                                                                             |
| 14. Datum                              | The datum line (STA 0) is located at 508 mm (20.0 in) aft of the most forward point of the fuselage cabin nose section.<br>For detailed information refer to approved RFM, Section 6.                                                                                                         |
| 15. Levelling Means                    | Plumb line from top of left door frame to the index plate located on left passengers' compartment floor.<br>For detailed information refer to approved Flight Manual, Section 6.                                                                                                              |
| 16. Minimum Flight Crew                | 1 pilot, who shall operate the aircraft from the right cockpit seat.<br>See Note 3 for IFR operations.                                                                                                                                                                                        |
| 17. Maximum Passenger Seating Capacity | 14 passengers,<br>(not limited by the emergency exits requirements)                                                                                                                                                                                                                           |
| 18. Passenger Emergency Exit           | 4, two on each side of the passengers' cabin                                                                                                                                                                                                                                                  |
| 19. Maximum Baggage/ Cargo Loads       | Baggage compartments:<br>180 kg (400 lb), see approved RFM loading schedule, Section 6<br>Cabin compartment:<br>Cargo floor loading 488 kg/m <sup>2</sup> (100 lb/ft <sup>2</sup> )<br>Tie-down fittings strength 566 kg (1 250 lb) vertical,<br>227 kg (500 lb) horizontal load per fitting. |
| 20. Rotor Blade Control Movement       | For rigging information refer to Maintenance Manual                                                                                                                                                                                                                                           |
| 21. Auxiliary Power Unit (APU)         | n/a                                                                                                                                                                                                                                                                                           |
| 22. Life-limited Parts                 | Refer to approved Airworthiness Limitations Manual                                                                                                                                                                                                                                            |

#### IV. Operating and Service Instructions

- |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Flight Manual | For helicopters up to s/n 5668:<br>Rotorcraft Flight Manual (Manuale di Volo), approved by letter 129.203/T, dated 16 February 1976 and subsequent approved revisions.<br>For helicopters s/n 5669 and subsequent:<br>Rotorcraft Flight Manual, (Manuale di Volo), approved by letter 145.469/T, dated 1 January 1978 and subsequent approved revisions.<br>For helicopters s/n 5669 and subsequent:<br>Rotorcraft Flight Manual, IFR configuration (Manuale di Volo), approved by letter 161.026/T, dated 27 November 1979 and subsequent approved revisions. |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



- |    |                                       |                                                                                                                                                                               |
|----|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. | Maintenance Manual                    | AB212 Airworthiness Limitations Manual, approved by RAI with letter n° 129.203/T, dated 16 February 1976.<br>BHT-212-MM Maintenance Manual                                    |
| 3. | Structural Repair Manual              | - BHT-ALL-SRM Structural Repair Manual<br>- BHT-MED-SRM-1 Structural Repair Manual: for Bell Medium Series Helicopters<br>- BHT-212-CR&O Component Repair and Overhaul Manual |
| 4. | Weight and Balance Manual             | Refer to the Chapter 6 of the RFM                                                                                                                                             |
| 5. | Illustrated Parts Catalogue           | BHT-212-IPC                                                                                                                                                                   |
| 6. | Service Letters and Service Bulletins | As published by the Type Certificate Holder as per "Section: Notes (pertinent to all models)", Note 3                                                                         |
| 7. | Required Equipment                    | Refer to III.3. above and approved RFM for the approved mandatory and optional equipment                                                                                      |

#### V. Notes (AB212 only)

1. Manufacturer's eligible serial numbers:  
Assembly drawing 212-900-001-7, /-11, /-23 from s/n 5501 to s/n 5568.  
Assembly drawing 212-900-001-35, /-111, /-1135 for s/n 5569 and subsequent.
2. For each helicopter when a certificate is released in the Chart "A" of Flight Manual the weight and balance data have to be recorded.  
These data should list all the prescribed equipment and those included in the empty weight.  
For the AB212 model the empty weight and the corresponding C.G. position have to include the not-drainable lubricant for total amount of 2.8 kg (6.3 lb) at STA 5 687 mm (231.0 in) and the not-usable fuel for total amount of 12.84 kg (28.3 lb) at STA 3 627 mm (142.8 in).
3. Model AB212 s/n 5569 and subsequent incorporating IFR modification are eligible for IFR operations when operated in accordance with the limitations of RAI RFM approved by letter n° 161.026/T, dated 15 November 1979.  
Minimum crew 2 (pilot and co-pilot) for IFR instrument operation.
4. A partition must not be installed between the passenger and crew compartments when the helicopter is equipped with litter kit P/N 205-706-047 for model AB212.
5. Model AB212 helicopters equipped with the external cargo suspension P/N 212-706-103 installation are in accordance and meet the structural and design requirements of the certification basis when operated to 11 200 lb gross weight in accordance with the limits of RAI-approved AB212 RFM Supplement 1. The retirement times are not changed.
6. The following placard must be displayed in front of and in clear view of the pilot:  
"This helicopter must be operated in compliance with the operating limitations specified in RAI approved Rotorcraft Flight Manual"  
All placards required in the approved RFM must be installed in the appropriate locations. The Maintenance Manual includes information about other placards and their locations.

\* \* \*



**SECTION 2: AB412** s/n 25501 to s/n 25669I. General

- |     |                                            |                                                                                                                 |
|-----|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| 1.  | Type/ Model/ Variant                       |                                                                                                                 |
| 1.1 | Type                                       | AB412                                                                                                           |
| 1.2 | Model                                      | AB412                                                                                                           |
| 1.3 | Variant                                    | AB412 s/n 25501 to s/n 25669                                                                                    |
| 2.  | Airworthiness Category                     | Large Rotorcraft, Cat A and Cat B                                                                               |
| 3.  | Manufacturer                               | see "Section: Notes (Pertinent to all models)", Note 3                                                          |
| 4.  | Type Certification Application Date to RAI | 20 April 1982                                                                                                   |
| 5.  | State of Design Authority                  | EASA<br>(pre EASA: RAI/ENAC, Italy)                                                                             |
| 6.  | Type Certificate Date by RAI               | 2 March 1983                                                                                                    |
| 7.  | Type Certificate n° by RAI                 | A 375                                                                                                           |
| 8.  | Type Certificate Data Sheet n° by RAI      | SO/A 157                                                                                                        |
| 9.  | EASA Type Certification Date               | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a),<br>(i), 1 <sup>st</sup> bullet. |

II. Certification Basis

- |     |                                                            |                                                                                                                                                                                                                                                                                                                                                                                     |
|-----|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Reference Date for determining the applicable requirements | 20 April 1982                                                                                                                                                                                                                                                                                                                                                                       |
| 2.  | Airworthiness Requirements                                 | FAR Part 29, dated 1 February 1965 Amdt. 29-1, 29-2 and FAR 29.473, 29.501, 29.771, 29.903(c), 29.1323, 29.1505(b), FAR 29.663 of Amdt. 29-3.<br>IFR Standards dated 15 December 1978.<br>For the ditching conditions FAR 29.801 and FAR 29.1415.<br>For the engine: FAA Type Certificate n° E22EA and TCCA TCDS E-10.<br>Compliance with Category A engine isolation requirements. |
| 3.  | Special Conditions                                         | FAA Special Condition n° 29-12-SW-1 Amdt. 1 and "Guidelines for Helicopter Certification Using Vertical Take-off Techniques from Ground Level and Elevated Heliports"                                                                                                                                                                                                               |
| 4.  | Exemptions                                                 | FAR 29.1323(c)                                                                                                                                                                                                                                                                                                                                                                      |
| 5.  | Deviations                                                 | none                                                                                                                                                                                                                                                                                                                                                                                |
| 6.  | Equivalent Safety Findings                                 | none                                                                                                                                                                                                                                                                                                                                                                                |
| 7.  | Requirements elected to comply                             | none                                                                                                                                                                                                                                                                                                                                                                                |
| 8.  | Environmental Protection Requirements                      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 8.1 | Noise Requirements                                         | See TCDSN EASA.R.114                                                                                                                                                                                                                                                                                                                                                                |
| 8.2 | Emission Requirements                                      | n/a                                                                                                                                                                                                                                                                                                                                                                                 |
| 9.  | Operational Suitability Data (OSD)                         | Not required for rotorcraft that are no longer in production.<br>CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).                                                                                                                                                                                                 |





III. Technical Characteristics and Operational Limitations

1. Type Design Definition
 

Type Design Definition Doc. 412G0000X005 Issue A and subsequent approved revisions
2. Description
 

Large twin-engine helicopter; four composite blades, the main rotor is four-bladed semi-rigid type, the tail rotor is a semi-rigid type twin bladed; skid type landing gear; the helicopter has seating provisions for fourteen passengers and one pilot or thirteen passengers and a crew of two. The Model AB412 is derived from AB212 which incorporates a four bladed rotor system and control.
3. Equipment
 

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

Approved mandatory and optional equipment are listed in reports 412-00-19, and 412-00-29 "Lista Equipaggiamenti".

Refer also to the Equipment list in RFM.
4. Dimensions
  - 4.1 Fuselage
 

Length:	12.70 m
Width stabiliser:	2.64 m
Height:	3.08 m
  - 4.2 Main Rotor
 

Diameter:	14.02 m
-----------	---------
  - 4.3 Tail Rotor
 

Diameter:	2.61 m
-----------	--------
5. Engine
  - 5.1 Model
 

Pratt and Whitney Canada Corporation  
PT6T-3B Twin Power Section Turboshaft
  - 5.2 Type Certificate
 

TCCA TC/TCDS n°:	E-10
FAA TC/TCDS n°:	E22EA
EASA TC/TCDS n°:	EASA.IM.E.059
  - 5.3 Limitations
    - 5.3.1 Installed Engine Limits
 

Sea level static / standard day

PT6T-3B engine:

AEO: Take-Off (5 min)	1 800 shp
AEO: Max Continuous	1 600 shp
OEI: (2-½ min)	1 025 shp
OEI: (30 min)	970 shp
    - 5.3.2 Transmission Torque Limits
 

Refer to approved RFM, Section 1
6. Fluids (Fuel/ Oil/ Additives)
  - 6.1 Fuel
 

Avjet type fuels conforming to ASTM D-1655, type A, A-1, B; or MIL-T-5624, Grade JP-4 (NATO F-40) or JP-5 (NATO F-44).

For detailed information see approved RFM Section 1.
  - 6.2 Oil
 

Engine:  
MIL-L-7808, MIL-L-23699.

Transmission:  
DOD-L-85734AS, MIL-L-7808, MIL-L-23699.

For detailed information see approved RFM Section 1.



6.3 Additives	n/a
7. Fluid capacities	
7.1 Fuel	<p>Helicopters up to s/n 25599:</p> <p>Total: 810 litres (214.0 US gal) at STA 3 881 mm (152.8 in)</p> <p>Usable: 800 litres (211.3 US gal) at STA 3 881 mm (152.8 in)</p> <p>Unusable: 10.6 litres (2.8 US gal) at STA 3 627 mm (142.8 in)</p> <p>With 40 US gal auxiliary fuel tank:</p> <p>Total: 962 litres (254.1 US gal) at STA 3 861 mm (152 in)</p> <p>Usable: 951 litres (251.2 US gal) at STA 3 861 mm (152 in)</p> <p>With 163 US gal auxiliary fuel tank:</p> <p>Total: 1 429 litres (377.5 US gal) at STA 3 840 mm (151.2 in)</p> <p>Usable: 1 417 litres (374.3 US gal) at STA 3 840 mm (151.2 in)</p> <p>Helicopters s/n 25600 through s/n 25669:</p> <p>Total: 1 260 litres (332.8 US gal) at STA 3 848 mm (151.5 in)</p> <p>Usable: 1 234 litres (326 US gal) at STA 3 838 mm (151.1 in)</p> <p>Unusable: 26.5 litres (7.0 US gal) at STA 3 251 mm (128.0 in)</p> <p>With 40 US gal auxiliary fuel tank:</p> <p>Total: 1 412 litres (373.0 US gal) at STA 3 833 mm (150.9 in)</p> <p>Usable: 1 385 litres (365.8 US gal) at STA 3 833 mm (150.9 in)</p> <p>With 163 US gal Auxiliary fuel tank:</p> <p>Total: 1 877 litres (496.0 US gal) at STA 3 823 mm (150.5 in)</p> <p>Usable: 1 851 litres (489.0 US gal) at STA 3 823 mm (150.5 in)</p>
7.2 Oil	<p>Engines:</p> <p>6 litres(1.6 US gal) each, at STA 4 646 mm (182.9 in)</p> <p>Usable: 2.8 litres (0.75 US gal)</p> <p>Total capacity: 12 litres (3.2 US gal)</p> <p>Engine combining gearbox:</p> <p>4.7 litres (1.25 US gal)</p> <p>Transmission: 10.4 litres (2.75 US gal)</p> <p>Intermediate (42°) gearbox:</p> <p>0.19 litre (0.2 US quart)</p> <p>Tail rotor gearbox (90°):</p> <p>0.38 litre (0.4 US quart)</p>
7.3 Coolant System Capacity	n/a
8. Air Speeds Limits	<p>See placard P/N 412-075-215 (V<sub>NE</sub> varies with altitude and temperature) Maximum V<sub>NE</sub> 140 KIAS.</p>



9. Rotor Speed Limits
- |            |                       |                                                  |
|------------|-----------------------|--------------------------------------------------|
| Power on:  |                       |                                                  |
| Maximum    | 100% N <sub>r</sub>   | (324 rpm)                                        |
| Maximum    | 104.6% N <sub>r</sub> | (339 rpm),<br>(for 0 to 30% transmission torque) |
| Minimum    | 97% N <sub>r</sub>    | (314 rpm)                                        |
| Power off: |                       |                                                  |
| Maximum    | 104.6% N <sub>r</sub> | (339 rpm)                                        |
| Minimum    | 91% N <sub>r</sub>    | (294 rpm), with<br>gross weight > 8 000 lb       |
| Minimum    | 80% N <sub>r</sub>    | (259 rpm), with<br>gross weight < 8 000 lb       |
10. Maximum Operating Altitude and Temperature
- 10.1 Altitude Maximum 6 100 m (20 000 ft) PA
- 10.2 Temperature Refer to approved RFM for WAT
11. Operating Limitations
- VFR day and night,  
IFR,  
Non-icing conditions.  
For additional limitations for take-off and landing see approved RFM Section 1.
12. Maximum Weight
- Helicopters s/n 25501 to s/n 25599:  
Maximum gross weight 5 260 kg (11 600 lb)
- Helicopters s/n 25501 to s/n 25599:  
Maximum gross weight 5 400 kg (11 900 lb), with  
increased gross weight and take-off horsepower (see  
Note 3).
- Helicopters s/n 25600 to s/n 25669:  
Maximum gross weight 5 400 kg (11 900 lb)
13. Centre of Gravity Range Refer to approved RFM Section 1 for C.G. envelope
14. Datum
- The datum line (STA 0) is located at 508 mm (20.0 in) aft  
of the most forward point of the fuselage cabin nose  
section.  
For detailed information refer to approved RFM, Section 5.
15. Levelling Means
- Plumb line from top of left door frame to the index plate  
located on left passengers' compartment floor.  
For detailed information refer to approved Flight Manual,  
Section 5.
16. Minimum Flight Crew
- 1 pilot, who shall operate the aircraft from the right  
cockpit seat.  
See Note 4 for IFR operations.
17. Maximum Passenger Seating Capacity
- 14 passengers,  
(not limited by the emergency exits requirements)
18. Passenger Emergency Exit
- 4, two on each side of the passengers' cabin
19. Maximum Baggage/ Cargo Loads
- Baggage compartments:  
180 kg (400 lb), see approved RFM loading schedule,  
Section 5
- Cabin compartment:  
Cargo floor loading 488 kg/m<sup>2</sup> (100 lb/ft<sup>2</sup>)  
Tie-down fittings strength 566 kg (1 250 lb) vertical,  
227 kg (500 lb) horizontal load per fitting.



- |                                  |                                                                     |
|----------------------------------|---------------------------------------------------------------------|
| 20. Rotor Blade Control Movement | For rigging information refer to the Model AB412 Maintenance Manual |
| 21. Auxiliary Power Unit (APU)   | n/a                                                                 |
| 22. Life-limited Parts           | Refer to approved Chapter 4 of AB412-MPM                            |

#### IV. Operating and Service Instructions

- |                                          |                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Flight Manual                         | For helicopters up to s/n 25599:<br>Rotorcraft Flight Manual (Manuale di Volo), approved by letter 189.110/T, dated 2 March 1983, and subsequent approved revisions.<br>For helicopters s/n 25600 to 25669:<br>Rotorcraft Flight Manual (Manuale di Volo), approved by letter 256.707/T, dated 30 June 1989, and subsequent approved revisions. (See Note 5) |
| 2. Maintenance Manual                    | AB412-MPM Maintenance Planning Manual (formerly AB412 Airworthiness Limitations Manual, approved by RAI with letter n° 189.110/T, dated 2 March 1983, and subsequent revisions)<br>AB412-MM Maintenance Manual                                                                                                                                               |
| 3. Structural Repair Manual              | - BHT-ALL-SRM Structural Repair Manual<br>- BHT-MED-SRM-1 Structural Repair Manual: for Bell Medium Series Helicopters<br>- BHT-412-CR&O Component Repair and Overhaul Manual<br>- BHT-412-CR&O-V Component Repair and Overhaul Manual – Vendor Data BHT412                                                                                                  |
| 4. Weight and Balance Manual             | Refer to the Chapter 5 of the RFM                                                                                                                                                                                                                                                                                                                            |
| 5. Illustrated Parts Catalogue           | AB412-IPC                                                                                                                                                                                                                                                                                                                                                    |
| 6. Service Letters and Service Bulletins | As published by the Type Certificate Holder as per “Section: Notes (pertinent to all models)”, Note 3                                                                                                                                                                                                                                                        |
| 7. Required Equipment                    | Refer to III.3. above and approved RFM for the approved mandatory and optional equipment                                                                                                                                                                                                                                                                     |

#### V. Notes (AB412 s/n 25501 to 25669 only)

1. Manufacturer's eligible serial numbers:  
Assembly drawing 412-900-001-103 (commercially identified as AB412 Standard) from s/n 25501 to s/n 25599,  
Assembly drawing 412-900-001-119 (commercially identified as AB412 SP) from s/n 25600 to s/n 25669.
2. For each helicopter when a certificate is released in the Chart “A” of Flight Manual the weight and balance data have to be recorded.  
These data should list all the prescribed equipment and those included in the empty weight.  
For the AB412 up to s/n 25599 model the empty weight and the corresponding C.G. position have to include the not-drainable lubricant for total amount of 2.8 kg (6.3 lb) at STA 5 687 mm (231.0 in) and the not-usable fuel for a total amount of 8.3 kg (18.3 lb) at STA 3 627 mm (142.8 in).
3. Model AB412 helicopters incorporating modification P/N 412-075-008-111 are eligible for use with total weight up to 5 400 kg (11 900 lb) and with increased take-off power in agreement with Appendix n° 9 limitations of Flight Manual s/n 25001 to 25599.



V. Notes (AB412 s/n 25501 to 25669 only)

4. Model AB412 helicopters incorporating IFR modification P/N 412-705-006 are eligible for IFR operations when operated in accordance with the limitations of EASA approved RFM.
5. Model AB412 helicopters s/n 25600 to 25669 are eligible for Category A operation when operated in accordance with approved RFM Section VI.
6. Model AB412 helicopters equipped with internal hoist installation P/N 214-706-003 comply the requirements of certification basis when used in accordance with Appendix n° 4 limitations of the RFM s/n 25001 to 25599
7. A partition must not be installed between the passenger and crew compartments when the helicopter is equipped with litter kit P/N 412-706-006 for model AB412.
8. Model AB412 helicopters equipped with the external cargo suspension P/N 212-706-103 installation are in accordance with the certification basis when operated in accordance with the limits of the RFM, Appendix 5 for helicopters AB412 s/n 25001 to 25599.
9. See Note 4 in "Section: Notes (Pertinent to all models)".

\* \* \*



**SECTION 3: AB412** s/n 25801 to s/n 25900I. General

- |     |                                            |                                                                                                                 |
|-----|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| 1.  | Type/ Model/ Variant                       |                                                                                                                 |
| 1.1 | Type                                       | AB412                                                                                                           |
| 1.2 | Model                                      | AB412                                                                                                           |
| 1.3 | Variant                                    | AB412 (s/n 25801 to s/n 25900)                                                                                  |
| 2.  | Airworthiness Category                     | Large Rotorcraft, Cat A and Cat B                                                                               |
| 3.  | Manufacturer                               | see "Section: Notes (Pertinent to all models)", Note 3                                                          |
| 4.  | Type Certification Application Date to RAI | 9 July 1990                                                                                                     |
| 5.  | State of Design Authority                  | EASA<br>(pre EASA: RAI/ENAC, Italy)                                                                             |
| 6.  | Type Certificate Date by RAI               | 27 January 1994                                                                                                 |
| 7.  | Type Certificate n° by RAI                 | A 375                                                                                                           |
| 8.  | Type Certificate Data Sheet n° by RAI      | SO/A 157                                                                                                        |
| 9.  | EASA Type Certification Date               | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a),<br>(i), 1 <sup>st</sup> bullet. |

II. Certification Basis

- |     |                                                            |                                                                                                                                                                                                                                                                                                                                                                                     |
|-----|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Reference Date for determining the applicable requirements | 9 July 1990                                                                                                                                                                                                                                                                                                                                                                         |
| 2.  | Airworthiness Requirements                                 | FAR Part 29, dated 1 February 1965 Amdt. 29-1, 29-2 and FAR 29.473, 29.501, 29.771, 29.903(c), 29.1323, 29.1505(b), FAR 29.663 of Amdt. 29-3.<br>IFR Standards dated 15 December 1978.<br>For the ditching conditions FAR 29.801 and FAR 29.1415.<br>For the engine: FAA Type Certificate n° E22EA and TCCA TCDS E-10.<br>Compliance with Category A engine isolation requirements. |
| 3.  | Special Conditions                                         | FAA Special Condition n° 29-12-SW-1 Amdt. 1 and "Guidelines for Helicopter Certification Using Vertical Take-off Techniques from Ground Level and Elevated Heliports"                                                                                                                                                                                                               |
| 4.  | Exemptions                                                 | FAR 29.1323(c)                                                                                                                                                                                                                                                                                                                                                                      |
| 5.  | Deviations                                                 | none                                                                                                                                                                                                                                                                                                                                                                                |
| 6.  | Equivalent Safety Findings                                 | none                                                                                                                                                                                                                                                                                                                                                                                |
| 7.  | Requirements elected to comply                             | none                                                                                                                                                                                                                                                                                                                                                                                |
| 8.  | Environmental Protection Requirements                      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 8.1 | Noise Requirements                                         | See TCDSN EASA.R.114                                                                                                                                                                                                                                                                                                                                                                |
| 8.2 | Emission Requirements                                      | n/a                                                                                                                                                                                                                                                                                                                                                                                 |
| 9.  | Operational Suitability Data (OSD)                         | Not required for rotorcraft that are no longer in production.<br>CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).                                                                                                                                                                                                 |



III. Technical Characteristics and Operational Limitations

- |    |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Type Design Definition        | Type Design Definition Doc. 412G0000X005 Issue A and subsequent approved revisions                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2. | Description                   | Large twin-engine helicopter; four composite blades, the main rotor is four-bladed semi-rigid type, the tail rotor is a semi-rigid type twin bladed; skid type landing gear; the helicopter has seating provisions for fourteen passengers and one pilot or thirteen passengers and a crew of two. The Model AB412 is derived from AB212 which incorporates a four bladed rotor system and control.                                                                                 |
| 3. | Equipment                     | Basic equipment required by the airworthiness rules (see Certification Basis) shall be installed on the helicopter for the Airworthiness Certificate release.<br>Approved mandatory and optional equipment are listed in reports 412-00-48 "Lista Equipaggiamenti".<br>Refer also to the Equipment list in RFM.                                                                                                                                                                     |
| 4. | Dimensions                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|    | 4.1 Fuselage                  | Length: 12.70 m<br>Width stabiliser: 2.64 m<br>Height: 3.08 m                                                                                                                                                                                                                                                                                                                                                                                                                       |
|    | 4.2 Main Rotor                | Diameter: 14.02 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|    | 4.3 Tail Rotor                | Diameter: 2.61 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. | Engine                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|    | 5.1 Model                     | Pratt and Whitney Canada Corporation<br>PT6T-3BE, (see Note 3)<br>PT6T-3D, (see Note 4)<br>PT6T-3DF, (see Note 5)                                                                                                                                                                                                                                                                                                                                                                   |
|    | 5.2 Type Certificate          | TCCA TC/TCDS n°: E-10<br>FAA TC/TCDS n°: E22EA<br>EASA TC/TCDS n°: EASA.IM.E.059                                                                                                                                                                                                                                                                                                                                                                                                    |
|    | 5.3 Limitations               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|    | 5.3.1 Installed Engine Limits | Sea level static / standard day<br><br>PT6T-3BE engine:<br>AEO: Take-Off (5 min) 1 800 shp<br>AEO: Max Continuous 1 600 shp<br>OEI: (2-½ min) 1 125 shp<br>OEI: (30 min) 970 shp<br><br>PT6T-3D engine:<br>AEO: Take-Off (5 min) 1 800 shp<br>AEO: Max Continuous 1 600 shp<br>OEI: (2-½ min) 1 130 shp<br>OEI: (30 min) 970 shp<br><br>PT6T-3DF engine:<br>AEO: Take-Off (5 min) 1 800 shp<br>AEO: Max Continuous 1 600 shp<br>OEI: (2-½ min) 1 130 shp<br>OEI: (30 min) 1 060 shp |



5.3.2	Transmission Torque Limits	Refer to approved RFM, Section 1
6.	Fluids (Fuel/ Oil/ Additives)	
6.1	Fuel	Avjet type fuels conforming to ASTM D-1655, type A, A-1, B; or MIL-T-5624, Grade JP-4 (NATO F-40) or JP-5 (NATO F-44). For detailed information see approved RFM Section 1.
6.2	Oil	Engine: MIL-L-7808, MIL-L-23699. Transmission: DOD-L-85734AS. For detailed information see approved RFM Section 1.
6.3	Additives	n/a
7.	Fluid capacities	
7.1	Fuel	Total: 1 260 litres (333.0 US gal) at STA 3 848 mm (151.5 in) Usable: 1 234 litres (326.0 US gal) at STA 3 838 mm (151.1 in) Unusable: 26.5 litres (7.0 US gal) at STA 3 251 mm (128.0 in) With 40 US gal auxiliary fuel tank: Total: 1 412 litres (373.0 US gal) at STA 3 833 mm (150.9 in) Usable: 1 385 litres (366.0 US gal) at STA 3 833 mm (150.9 in) With 163 US gal auxiliary fuel tank: Total: 1 877 litres (496.0 US gal) at STA 3 823 mm (150.5 in) Usable: 1 851 litres (489.0 US gal) at STA 3 823 mm (150.5 in)
7.2	Oil	Engines: 6 litres(1.6 US gal) each, at STA 4 646 mm (182.9 in) Usable: 2.8 litres (0.75 US gal) Total capacity: 12 litres (3.2 US gal) Transmission: 10.4 litres (2.75 US gal) Intermediate (42°) gearbox: 0.19 litre (0.2 US quart) Tail rotor gearbox (90°): 0.38 litre (0.4 US quart)
7.3	Coolant System Capacity	n/a
8.	Air Speeds Limits	See placard P/N 412-075-215 (V <sub>NE</sub> varies with altitude and temperature) Maximum V <sub>NE</sub> 140 KIAS.
9.	Rotor Speed Limits	Power on: Maximum 100% N <sub>r</sub> (324 rpm) Maximum 104.6% N <sub>r</sub> (339 rpm), (for 0 to 30% transmission torque for s/n 25801 and subsequent) Minimum 97% N <sub>r</sub> (314 rpm)





Power off:		
Maximum	104.6% N <sub>r</sub>	(339 rpm)
Minimum	91% N <sub>r</sub>	(294 rpm), with gross weight > 8 000 lb
Minimum	80% N <sub>r</sub>	(259 rpm), with gross weight < 8 000 lb

10. Maximum Operating Altitude and Temperature
- 10.1 Altitude Maximum 6 100 m (20 000 ft) PA
- 10.2 Temperature Refer to approved RFM for WAT
11. Operating Limitations VFR day and night,  
IFR,  
Non-icing conditions.  
For additional limitations for take-off and landing see approved RFM Section 1.
12. Maximum Weight Maximum gross weight 5 400 kg (11 900 lb)
13. Centre of Gravity Range Refer to approved RFM Section 1 for C.G. envelope
14. Datum The datum line (STA 0) is located at 508 mm (20.0 in) aft of the most forward point of the fuselage cabin nose section.  
For detailed information refer to approved RFM, Section 5.
15. Levelling Means Plumb line from top of left door frame to the index plate located on left passengers' compartment floor.  
For detailed information refer to approved Flight Manual, Section 5.
16. Minimum Flight Crew 1 pilot, who shall operate the aircraft from the right cockpit seat.  
See Note 6 for IFR operations.
17. Maximum Passenger Seating Capacity 14 passengers,  
(not limited by the emergency exits requirements)
18. Passenger Emergency Exit 4, two on each side of the passengers' cabin
19. Maximum Baggage/ Cargo Loads Baggage compartments:  
180 kg (400 lb), see approved RFM loading schedule, Section 5  
Cabin compartment:  
Cargo floor loading 488 kg/m<sup>2</sup> (100 lb/ft<sup>2</sup>)  
Tie-down fittings strength 566 kg (1 250 lb) vertical,  
227 kg (500 lb) horizontal load per fitting.
20. Rotor Blade Control Movement For rigging information refer to the Model AB412 Maintenance Manual
21. Auxiliary Power Unit (APU) n/a
22. Life-limited Parts Refer to approved Chapter 4 of AB412-MPM



IV. Operating and Service Instructions

- |    |                                       |                                                                                                                                                                                                                                                             |
|----|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Flight Manual                         | Rotorcraft Flight Manual (Manuale di Volo), approved by letter 93.3547/MAE, dated 16 December 1993 and subsequent approved revisions. (See Note 7)                                                                                                          |
| 2. | Maintenance Manual                    | AB412-MPM Maintenance Planning Manual (formerly AB412 Airworthiness Limitations Manual, approved by RAI with letter n° 189.110/T, dated 2 March 1983, and subsequent revisions)<br>AB412-MM Maintenance Manual                                              |
| 3. | Structural Repair Manual              | - BHT-ALL-SRM Structural Repair Manual<br>- BHT-MED-SRM-1 Structural Repair Manual: for Bell Medium Series Helicopters<br>- BHT-412-CR&O Component Repair and Overhaul Manual<br>- BHT-412-CR&O-V Component Repair and Overhaul Manual – Vendor Data BHT412 |
| 4. | Weight and Balance Manual             | Refer to the Chapter 5 of the Rotorcraft Flight Manual                                                                                                                                                                                                      |
| 5. | Illustrated Parts Catalogue           | AB412-IPC                                                                                                                                                                                                                                                   |
| 6. | Service Letters and Service Bulletins | As published by the Type Certificate Holder as per “Section: Notes (pertinent to all models)”, Note 3                                                                                                                                                       |
| 7. | Required Equipment                    | Refer to point III.3. above and approved RFM for the approved mandatory and optional equipment                                                                                                                                                              |

V. Notes (AB412 s/n 25801 to 25900 only)

1. Manufacturer's eligible serial numbers:  
Assembly drawing 412-900-001-139 (commercially identified as AB412 HP) from s/n 25801 to s/n 25900.
2. For each helicopter when a certificate is released in the Chart “A” of Flight Manual the weight and balance data have to be recorded.  
These data should list all the prescribed equipment and those included in the empty weight.  
For helicopters AB412 s/n 25600 to 25900 the not-usable fuel is 20.6 kg (45.5 lb) at STA 3 251 mm (128 in).
3. AB412 helicopters s/n 25801 and subsequent installing PT6T-3BE engine satisfy the base of the certification if operating in accordance with the approved Rotorcraft Flight Manual.
4. AB412 helicopters s/n 25801 and subsequent installing PT6T-3D engine satisfy the base of the certification if operating in accordance with Appendix 20 to the approved RFM.
5. AB412 helicopters s/n 25801 and subsequent installing PT6T-3DF engine satisfy the base of the certification if operating in accordance with Appendix 24 to the approved RFM.
6. Model AB412 helicopters incorporating IFR modification P/N 412-705-006 are eligible for IFR operations when operated in accordance with the limitations of EASA approved RFM.
7. Model AB412 helicopters s/n 25801 to 25900 are eligible for Category A operation when operated in accordance with approved RFM Section VI.
8. A partition must not be installed between the passenger and crew compartments when the helicopter is equipped with litter kit P/N 412-706-006 for model AB412.
9. Model AB412 helicopters equipped with the external cargo suspension P/N 212-706-103 installation are in accordance with the certification basis when operated in accordance with the limits of RFM, Appendix 3 for helicopters AB412 s/n 25600 to 25900.
10. See Note 4 in “Section: Notes (Pertinent to all models)”.

\* \* \*



**SECTION 4: AB412 EP**I. General

- |                                               |                                                                                                                 |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| 1. Type/ Model/ Variant                       |                                                                                                                 |
| 1.1 Type                                      | AB412                                                                                                           |
| 1.2 Model                                     | AB412 EP                                                                                                        |
| 1.3 Variant                                   | ---                                                                                                             |
| 2. Airworthiness Category                     | Large Rotorcraft, Cat A and Cat B                                                                               |
| 3. Manufacturer                               | see "Section: Notes (Pertinent to all models)", Note 3                                                          |
| 4. Type Certification Application Date to RAI | 25 January 1995                                                                                                 |
| 5. State of Design Authority                  | EASA<br>(pre EASA: RAI/ENAC, Italy)                                                                             |
| 6. Type Certificate Date by RAI               | 27 June 1996                                                                                                    |
| 7. Type Certificate n° by RAI                 | A 375                                                                                                           |
| 8. Type Certificate Data Sheet n° by RAI      | SO/A 157                                                                                                        |
| 9. EASA Type Certification Date               | 28 September 2003,<br>in accordance with CR (EU) 1702/2003, Article 2, 3., (a),<br>(i), 1 <sup>st</sup> bullet. |

II. Certification Basis

- |                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Reference Date for determining the applicable requirements | 25 January 1995                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. Airworthiness Requirements                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                               | FAR Part 29, dated 1 February 1965 Amdt. 29-1, 29-2 and FAR 29.473, 29.501, 29.771, 29.903(c), 29.1323, 29.1505(b), FAR 29.663 Amdt. 29-3; FAR 29.1457 Amdt. 29-6; FAR 29.939 Amdt. 29-12; FAR 29.1335, 29.1351 Amdt. 29-14; FAR 29.1353, FAR 29.1581 Amdt. 29-15; FAR 29.1545 Amdt. 29-17; FAR 29.1321 Amdt. 29-21; FAR 29.151, 29.161, 29.672, 29.1303, 29.1309, 29.1325, 29.1329, 29.1331, 29.1333, 29.1355, 29.1357, 29.1555 Amdt. 29-24; FAR 29.1459 Amdt. 29-25; FAR 29.1549 Amdt. 29-26; Appendix B to Part 29 Amdt. 29-31; FAR 29.2 Amdt. 29-32.<br>IFR Standards dated 15 December 1978.<br>For the ditching conditions FAR 29.801 and FAR 29.1415.<br>For the engine: FAA Type Certificate n° E22EA and TCCA TCDS E-10.<br>Compliance with Category A engine isolation requirements. |
| 3. Special Conditions                                         | FAA Special Condition n° 29-12-SW-1 Amdt. 1 and "Guidelines for Helicopter Certification Using Vertical Take-off Techniques from Ground Level and Elevated Heliports"<br>FAA Special Condition n° 91-SW-3 BHT Model 412 SAR Helicopter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 4. Exemptions                                                 | FAR 29.1323(c)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 5. Deviations                                                 | none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6. Equivalent Safety Findings                                 | none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7. Requirements elected to comply                             | none                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |



## 8. Environmental Protection Requirements

## 8.1 Noise Requirements

See TCDSN EASA.R.114

## 8.2 Emission 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 CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

## 1. Type Design Definition

Type Design Definition Doc. 412G0000X006 Issue A and subsequent approved revisions

## 2. Description

Large twin-engine helicopter; four composite blades, the main rotor is four-bladed semi-rigid type, the tail rotor is a semi-rigid type twin bladed; skid type landing gear; the helicopter has seating provisions for fourteen passengers and one pilot or thirteen passengers and a crew of two. The model AB412 EP is derived from the model AB412 and differs primarily in the installation of engines PT6T-3D and PT6T-3DF.

## 3. Equipment

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

Approved mandatory and optional equipment are listed in reports 412-00-57 "Lista Equipaggiamenti".

Refer also to the Equipment list in RFM.

For IFR operation with one or two pilots during day and night install IFR P/N 412-705-006 (all dashes approved).

## 4. Dimensions

## 4.1 Fuselage

Length: 12.70 m

Width stabiliser: 2.64 m

Height: 3.08 m

## 4.2 Main Rotor

Diameter: 14.02 m

## 4.3 Tail Rotor

Diameter: 2.61 m

## 5. Engine

## 5.1 Model

Pratt and Whitney Canada Corporation

PT6T-3D

PT6T-3DF, (see Note 3)

## 5.2 Type Certificate

TCCA TC/TCDS n°: E-10

FAA TC/TCDS n°: E22EA

EASA TC/TCDS n°: EASA.IM.E.059

## 5.3 Limitations

## 5.3.1 Installed Engine Limits

Sea level static / standard day

PT6T-3D engine:

AEO: Take-Off (5 min) 1 800 shp

AEO: Max Continuous 1 600 shp

OEI: (2-½ min) 1 130 shp

OEI: (30 min) 970 shp



## PT6T-3DF engine:

AEO: Take-Off (5 min)	1 800 shp
AEO: Max Continuous	1 600 shp
OEI: (2-½ min)	1 130 shp
OEI: (30 min)	1 060 shp

## 5.3.2 Transmission Torque Limits

Refer to approved RFM, Section 1

## 6. Fluids (Fuel/ Oil/ Additives)

## 6.1 Fuel

Avjet type fuels conforming to ASTM D-1655, type A, A-1, B; or MIL-T-5624, Grade JP-4 (NATO F-40) or JP-5 (NATO F-44). For detailed information see approved RFM Section 1.

## 6.2 Oil

Engine:

MIL-L-7808, MIL-L-23699 or DOD-L-85734AS.

Transmission:

DOD-L-85734AS.

For detailed information see approved RFM Section 1.

## 6.3 Additives

n/a

## 7. Fluid capacities

## 7.1 Fuel

Total: 1 260 litres (333.0 US gal)  
at STA 3 848 mm (151.5 in)

Usable: 1 234 litres (326.0 US gal)  
at STA 3 838 mm (151.1 in)

Unusable: 26.5 litres (7.0 US gal)  
at STA 3 251 mm (128.0 in)

With 40 US gal auxiliary fuel tank:

Total: 1 412 litres (373.0 US gal)  
at STA 3 833 mm (150.9 in)

Usable: 1 385 litres (366.0 US gal)  
at STA 3 833 mm (150.9 in)

With 163 US gal auxiliary fuel tank:

Total: 1 877 litres (496.0 US gal)  
at STA 3 823 mm (150.5 in)

Usable: 1 851 litres (489.0 US gal)  
at STA 3 823 mm (150.5 in)

## 7.2 Oil

Engines:

6 litres (1.6 US gal) each, at STA 4 646 mm (182.9 in)

Usable: 2.8 litres (0.75 US gal)

Total capacity: 12 litres (3.2 US gal)

Transmission: 10.4 litres (2.75 US gal)

Intermediate (42°) gearbox:

0.19 litre (0.2 US quart)

Tail rotor gearbox (90°): 0.38 litre (0.4 US quart)

## 7.3 Coolant System Capacity

n/a

## 8. Air Speeds Limits

See placard P/N 412-075-215

(V<sub>NE</sub> varies with altitude and temperature)Maximum V<sub>NE</sub> 140 KIAS.

## 9. Rotor Speed Limits

Power on:

Maximum 100% N<sub>r</sub> (324 rpm)Maximum 104.6% N<sub>r</sub> (339 rpm),

(for 0 to 30% transmission torque)

Minimum 97% N<sub>r</sub> (314 rpm)

	Power off:	
	Maximum	104.6% N <sub>r</sub> (339 rpm)
	Minimum	91% N <sub>r</sub> (294 rpm), with gross weight > 8 000 lb
	Minimum	80% N <sub>r</sub> (259 rpm), with gross weight < 8 000 lb
10.	Maximum Operating Altitude and Temperature	
	10.1 Altitude	Maximum 6 100 m (20 000 ft) PA
	10.2 Temperature	Refer to approved RFM for WAT
11.	Operating Limitations	VFR day and night, IFR, Non-icing conditions. For additional limitations for take-off and landing see approved RFM Section 1.
12.	Maximum Weight	Maximum gross weight 5 400 kg (11 900 lb)
13.	Centre of Gravity Range	Refer to approved RFM Section 1 for C.G. envelope
14.	Datum	The datum line (STA 0) is located at 508 mm (20.0 in) aft of the most forward point of the fuselage cabin nose section. For detailed information refer to approved RFM, Section 5.
15.	Levelling Means	Plumb line from top of left door frame to the index plate located on left passengers' compartment floor. For detailed information refer to approved RFM, Section 5.
16.	Minimum Flight Crew	1 pilot, who shall operate the aircraft from the right cockpit seat. See Note 4 for IFR operations.
17.	Maximum Passenger Seating Capacity	14 passengers, (not limited by the emergency exits requirements)
18.	Passenger Emergency Exit	4, two on each side of the passengers' cabin
19.	Maximum Baggage/ Cargo Loads	Baggage compartments: 180 kg (400 lb), see approved RFM loading schedule, Section 5 Cabin compartment: Cargo floor loading 488 kg/m <sup>2</sup> (100 lb/ft <sup>2</sup> ) Tie-down fittings strength 566 kg (1 250 lb) vertical, 227 kg (500 lb) horizontal load per fitting.
20.	Rotor Blade Control Movement	For rigging information refer to the Model AB412 Maintenance Manual
21.	Auxiliary Power Unit (APU)	n/a
22.	Life-limited Parts	Refer to approved Chapter 4 of AB412-MPM



IV. Operating and Service Instructions

- |    |                                       |                                                                                                                                                                                                                                                             |
|----|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Flight Manual                         | Refer to the Rotorcraft Flight Manual (Manuale di Volo) approved with letter 96.2817, dated 4 July 1996 and subsequent approved revisions.<br>(See Note 5)                                                                                                  |
| 2. | Maintenance Manual                    | AB412-MPM Maintenance Planning Manual (formerly AB412 Airworthiness Limitations Manual, approved by RAI with letter n° 189.110/T, dated 2 March 1983, and subsequent revisions)<br>AB412-MM Maintenance Manual                                              |
| 3. | Structural Repair Manual              | - BHT-ALL-SRM Structural Repair Manual<br>- BHT-MED-SRM-1 Structural Repair Manual: for Bell Medium Series Helicopters<br>- BHT-412-CR&O Component Repair and Overhaul Manual<br>- BHT-412-CR&O-V Component Repair and Overhaul Manual – Vendor Data BHT412 |
| 4. | Weight and Balance Manual             | Refer to the Chapter 5 of the RFM                                                                                                                                                                                                                           |
| 5. | Illustrated Parts Catalogue           | AB412EP-IPC                                                                                                                                                                                                                                                 |
| 6. | Service Letters and Service Bulletins | As published by the Type Certificate Holder as per “Section: Notes (pertinent to all models)”, Note 3                                                                                                                                                       |
| 7. | Required Equipment                    | Refer to point III.3. above and approved RFM for the approved mandatory and optional equipment                                                                                                                                                              |

V. Notes (AB412 EP only)

1. Manufacturer's eligible serial numbers:  
Assembly drawing 412-900-001-1145 (VFR) s/n 25901 and subsequent.  
Assembly drawing 412-900-001-2145 (IFR) s/n 25901 and subsequent.
2. For each helicopter when a certificate is released in the Chart “A” of Flight Manual the weight and balance data have to be recorded.  
These data should list all the prescribed equipment and those included in the empty weight.  
For helicopters AB412 EP s/n 25901 and subsequent the empty weight and the corresponding C.G. position have to include the not-drainable lubricant for total amount of 2.8 kg (6.3 lb) at STA 5 687 mm (231.0 in) and the not-usable fuel for total amount of 20.6 kg (45.5 lb) at STA 3 251 mm (128 in).
3. AB412 EP helicopters s/n 25901 and subsequent installing PT6T-3DF engine satisfy the base of the certification if operating in accordance with Appendix 29 to the approved RFM.
4. Model AB412 EP helicopters in IFR configuration (412-900-001-2145) are eligible for IFR operations when operated in accordance with the limitations of EASA approved RFM.
5. Model AB412 EP helicopters s/n 25901 and subsequent are eligible for Category A operation when operated in accordance with Appendix 1 to the RFM.
6. Model AB412 EP helicopters equipped with the external cargo suspension P/N 212-706-103 installation are in accordance with the certification basis when operated in accordance with the limits of the RFM, Appendix 3 for helicopters AB412 EP s/n 25901 and subsequent.
7. A partition must not be installed between the passenger and crew compartments when the helicopter is equipped with litter kit P/N 412-706-006 for model AB412 EP.
8. See Note 4 in “Section: Notes (Pertinent to all models)”.

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**SECTION: NOTES PERTINENT TO ALL MODELS**

1. The mandatory inspection and airworthiness limitations are reported in:  
Manuale delle ispezioni e Sostituzioni Obbligatorie AB212, RAI-approved by letter n° 129.203/T, dated 16 February 1976 and subsequent revisions.  
Maintenance Planning Manual AB412-MPM.  
The retirement life limits cannot be increased without EASA approval.
2. A partition must not be installed between the passenger and crew compartments that will obstruct the pilot's view of the passenger large sliding doors and hinged panels. Interior linings must not be installed that obstruct the view of the crew/passenger (forward) door latch engagements with the fuselage.

3. Type Certificate Holder and Manufacturer Record

Type Certificate Holder and Manufacturer	Period
Costruzioni Aeronautiche Giovanni Agusta Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	until 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

4. The following placard must be displayed in front of and in clear view of the pilot:  
“This helicopter must be operated in compliance with the operating limitations specified in the approved Flight Manual. The Airworthiness Limitations Manual must be complied with.”  
All placards required in the approved RFM must be installed in the appropriate locations. The Maintenance Manual includes information about other placards and their locations.





**SECTION: ADMINISTRATIVE**I. Acronyms and Abbreviations

AEO	All Engines Operating	MPM	Maintenance Planning Manual
Amdt.	Amendment	OEI	One Engine Inoperative
C.G.	Centre of Gravity	P/N	Part number
DA	Density Altitude	PA	Pressure Altitude
ENAC	Ente Nazionale per l'Aviazione Civile (Civil Aviation Authority of Italy)	RAI	Registro Aeronautico Italiano, (Aviation Authority of Italy) predecessor of ENAC
FAA	Federal Aviation Administration	RFM	Rotorcraft Flight Manual
IFR	Instrument Flight Rules	s/n	Serial Number
IPC	Illustrated Parts Catalogue	VFR	Visual Flight Rules
Max	Maximum	V <sub>NE</sub>	Never Exceed Speed
MM	Maintenance Manual	WAT	Weight-Altitude-Temperature

II. Type Certificate Holder Record

see "Section: Notes (Pertinent to all models)", Note 3

III. Change Record

Issue	Date	Changes	TC issue
Issue 1	18 Dec 2014	Initial EASA Issue; transfer of RAI/ENAC TCDS SO/A 157 into EASA format	Initial Issue 6 March 1976 Initial EASA Issue 18 December 2014
Issue 2	17 Mar 2016	Change of TC holder name, TCDS reformatted to include OSD reference	Re-issued 17 March 2016
Issue 3	22 Apr 2016	For all models: EASA.IM.E.059 added to III. 5.2	---
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Issue 4	13 Feb 2017	TCDS updated and data refined, rearranged unchanged data not marked; reference to type design corrected in TC	Re-issued 13 February 2017

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