

European Aviation Safety Agency

EASA TYPE-CERTIFICATE DATA SHEET

Embraer EMB-500

Manufacturer: Embraer

Empresa Brasileira de Aeronáutica SA
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brasil

For models: EMB-500

Issue 2, 05 August 2011

Special Condition D-11 added, Max passenger capacity increased to 6, ZFW corrected to 3830 kg.

Issue 3, 08 December 2011

Special Condition D-12 added, Max passenger capacity increased to 7.

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SECTION 1: GENERAL EMB-500

1. **Data Sheet No:** EASA IM.A.157
2. **Airworthiness Category:** CS-23 Normal Category.
3. **Certifying Authority:** Agência Nacional De Aviação Civil-ANAC
Gerência Geral de Certificação de
Produtos Aeronáuticos
Av. Cassiano Ricardo, 521 – Bloco B – 2º.
Andar - Jd. Aquarius
12246-870 – São José dos Campos-SP
Brazil
4. **Type Certificate Holder:** **Embraer**
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

SECTION 2

I. General

1. **Aeroplane:** Embraer EMB-500
(See Note 6)
2. **EASA Validation Application Date:** 30 June 2006
3. **ANAC Type Certification Date:** 09 December 2008
4. **EASA Validation Date:** 24 April 2009

II. Certification Basis

1. **Reference Date for ANAC Certification:** 30 June 2006
ANAC Type Certificate Data Sheet No. EA-2008T09
2. **ANAC Certification Basis:** RBHA 23 - Requisitos de Aeronavegabilidade. Aviões Categoria Normal, Utilidade, Acrobática e Transporte Regional (Airworthiness Standards. Normal, Utility, Acrobatic, and Commuter Category Airplanes), corresponding to U.S. 14 CFR Part 23 including amendments 23-1 through 23-55, as applicable to Normal Category Certification; and additional requirements as per ANAC FCAR HT-01.

3. EASA Airworthiness Requirements:

CS 23 – “Normal, Utility, Aerobatic and Commuter Category Aeroplanes” of 14 November 2003, as applicable to Normal Category Certification; and additional requirements as per EASA CRI A-01.

4. EASA Special Conditions:

B-01	Human Factors in Integrated Avionics Systems
B-02	CS-23 Subpart B (Performance).
B-52	Flight Handling Special Condition
B-53	Airspeed Calibration
B-55	Operating Limitations and Information.
C-52	Bird strike
C-57	Fuel tank Crashworthiness
C-60	Interaction of systems and structures
C-61	Non-pressurised areas
C-64	Sonic Fatigue
C-69	Yawing Manoeuvre
C-70	Round the clock gusts
D-03	Take off Configuration Warning
D-04	Landing Gear
D-05	wheels and tyres
D-06	Brakes and Braking Systems
D-07	Nose wheel Steering
D-08	Doors
D-11	Belted Toilet Seat
D-12	Single Side Facing Seat
E-07	Negative Acceleration
E-08	Lines, fittings and components
E-51	Powerplant Fire Protection and Fuel Systems
E-56	Fire extinguishers fuselage mounted engines
E-58	FADEC integration
E-60	Hot Weather Operation
F-01	Protection from HIRF
F-02	Protection from the indirect effects of lightning strike.
F-56	Battery Endurance Requirements

5. EASA Exemptions:

N/A

6. EASA Equivalent Safety Findings:

B-56	Dynamic Stability
D-54	Ditching emergency exit for Passengers
E-54	Digital Fuel Quantity indications
E-55	Digital only display of Turbine spool speed N2
E-57	Control markings usable fuel capacity
F-55	LED Lights

7. **EASA Environmental Standards:**

CS 34 - Aircraft Engine Emissions and Fuel Venting, of 17 October 2003;
CS 36 - Aircraft Noise, of 17 October 2003;

III. **Technical Characteristics and Operational Limitations**

1. **Design Standard:** Defined by Report 500TDSD002 "Type Design Standard Document – EASA" at Revision Original or later approved revision.
2. **Description:** Low wing jet with a T-tail configuration, powered by two high bypass turbofan engines mounted on aft fuselage pylons.

The structure is conventional, with a predominant aluminum-alloy fuselage and wing. The landing gear is retractable tricycle type, and both main and nose landing gear are single wheeled.
3. **Dimensions:**

Length	12.82 m	(42 ft 1 in)
Span	12.3 m	(40 ft 4.3 in)
Height	4.35 m	(14 ft 2.6 in)
Wing Area	18.76 m ²	(201.9 ft ²)
4. **Engines:** Two Pratt & Whitney Canada PW617F-E turbofans (TC/TCDS reference IM.E.125)
5. **Fuel:** Refer to applicable approved manuals
6. **Oil:** Refer to applicable approved manuals
7. **Airspeeds:** V_{MO} 275 K_{IAS}, M_{MO} 0.7 (See Airplane Flight Manual)
8. **Maximum Operating Altitude:** 12,497 m (41,000 ft) pressure altitude
9. **Operational Capability:** Single Pilot / Two Pilots
VFR Day and Night
IFR Day and Night
RVSM
Flight into Known Icing
Over Water
10. **Maximum Certified Weights:**

Takeoff:	4750 kg (10472 lb)
Landing:	4430 kg (9766 lb)
Zero Fuel:	3830 kg (8444 lb)
Ramp:	4770 kg (10516 lb)
11. **Centre of Gravity:** See Airplane Flight Manual
12. **Datum:** 2.51 m (98.82 in) forward of the jig point (nose jack pad location).

13. **Mean Aerodynamic Chord (MAC):** 1.64 m (64.57 in.) (L.E. of MAC at + 5.32 m (209.65 in.) aft of datum)
14. **Levelling Means:** Located in the main door between frames 9 and 10 (see AMM for further information)
15. **Minimum Flight Crew:** (See note 5 for cockpit equipment /arrangement restrictions)
One pilot (in the left pilot seat) plus additional equipment as specified in the Limitations Section of the EASA Approved Airplane Flight Manual or

One pilot and one copilot.
16. **Maximum Passenger Capacity:** Maximum Seven.
17. **Baggage / Cargo Compartment:**
- | | |
|-----------------------------|-----------------|
| Forward baggage compartment | 30 kg (66 lb) |
| AFT baggage compartment | 160 kg (353 lb) |
| Wardrobe | 30 kg (66 lb) |
| Lavatory Cabinet | 15 kg (33 lb) |

IV. Operating and Servicing Instructions

1. **Airplane Flight Manual (AFM):**

Airplanes must be operated according to the EASA approved AFM, part number AFM-2657, revision original (or later approved revision)

2. **Airplane Maintenance Manual (AMM):**

Airplane Maintenance Manual, part number AMM - 2432 revision original (or later approved revision). See Chapter 4, "Airworthiness Limitations" (Note 3). "Airworthiness Limitations" may not be changed without the approval of EASA.

V Notes

NOTE 1 - Weight and balance.

Current weight and balance report, including the list of equipment that are part of the certificated basic empty weight and loading instructions, must be provided for each aircraft at the time of original certification.

The certificated empty weight and corresponding center of gravity location must include:

Unusable fuel: 20 kg (44 lb) at + 5.81 m (228.90 in.) aft of datum

Full oil:* 8 kg (17.64 lb) at + 7.68 m (302.52 in) aft of datum*

Hydraulic Fluid: 1.4 kg (3.09 lb) at + 0.87 m (34.17 in) aft of datum

*It is considered the oil from the engine installation (filters and lines)

NOTE 2 - Markings and placards.

All marking and placards required by the applicable certification requirements (see certification basics) and by the operational requirements must be installed in the appropriated locations.

Required placards and marking are listed in chapter Eleven (11) of the Aircraft Illustrated Parts Catalog (AIPC) and Airplane Maintenance Manual (AMM).

NOTE 3 - Continuing Airworthiness.

See Maintenance Manual, Chapter Four (4), "Airworthiness Limitations" for Systems Airworthiness Limitations, Structure Airworthiness Limitations (ALI) and Life-Limited Items (LLI). The life limit for rotating parts on the PW617F-E engine is in the Airworthiness Limitations Manual of the Pratt & Whitney Canada Engine P/N 3072699, latest revision.

NOTE 4 - All replacement seats (crew and passenger), although they may comply with TSO C127, must also be demonstrated to comply with installation requirements into the aircraft listed in CS 23.2, 23.561, 23.562, and 23.785.

The foam cushion buildup of all seats (crew and passenger) may not be altered. Any deviation in the foam construction or stiffness must be demonstrated by test or analysis to comply with the CS 23.562 paragraph.

NOTE 5 - Approval for operation with a minimum crew of one pilot (in the left pilot seat) is based upon the cockpit equipment installation and arrangement evaluated during ANAC certification testing. No significant changes may be made to the installed cockpit equipment or arrangement (EFIS, autopilot, avionics, etc.), except as permitted by the approved MMEL, without prior approval from the responsible Aircraft Certification Office.

NOTE 6 - The EMB-500 is often referred to in Embraer marketing literature as the "PHENOM 100". This name is strictly marketing designation and is not part of the official model designation.