This data sheet which is part of Type Certificate No. A59CE prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of Title 14 of the Code of Federal Regulations.

Type Certificate Holder
Embraer S.A.
Av. Brigadeiro Faria Lima, 2,170
12227-901 -- São José dos Campos -- SP
Brazil

Type Certificate Holder Record
Empresa Brasileira de Aeronáutica S.A. (EMBRAER)
changed company name to Embraer S.A. effective November 19, 2010.

I. Model EMB-500, (Normal Category), Approved December 12, 2008

Engines:
Two Pratt & Whitney Canada PW617F-E turbofans
Engine TC #E00080EN — Certified October 3, 2008

Fuel:
ASTM Specification D1655-JET A and JET A-1,
Military Specification MIL-DTL-83133-JP8,
Brazilian Specification CNP08-QAV-1
(Use the latest version of the Standard Specifications)

Engine Limits:
Static thrust standard day, sea level (see NOTE 7)

<table>
<thead>
<tr>
<th></th>
<th>Standard Version</th>
<th>Enhanced Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takeoff (5 min.)</td>
<td>1,695 lb.</td>
<td>1,695 lb.</td>
</tr>
<tr>
<td>ATR (10 min.)</td>
<td>1,720 lb.</td>
<td>1,820 lb.</td>
</tr>
</tbody>
</table>

Maximum permissible engine rotor operating speeds (Takeoff and Maximum Continuous)

<table>
<thead>
<tr>
<th></th>
<th>Takeoff (100%)</th>
<th>Enhanced (102%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$N_1$ (fan)</td>
<td>100% (19,845 rpm)</td>
<td>102% (40,840 rpm)</td>
</tr>
<tr>
<td>$N_2$ (Gas Gen.)</td>
<td>100.4% (40,200 rpm)</td>
<td></td>
</tr>
<tr>
<td>$N_1$ Transient</td>
<td>101% (20,043 rpm)</td>
<td></td>
</tr>
<tr>
<td>$N_2$ Transient</td>
<td>102% (40,840 rpm)</td>
<td></td>
</tr>
</tbody>
</table>

Maximum permissible interturbine gas temperatures

<table>
<thead>
<tr>
<th></th>
<th>Takeoff 830 Deg C</th>
<th>ATR 845 Deg C</th>
<th>Max. continuous 830 Deg C</th>
<th>Transient 950 Deg C (see NOTE 8)</th>
</tr>
</thead>
</table>
Engine Limits, Continued:
Transient (operation 20 sec.) 862 Degrees C

Airspeed Limitations:
\[ V_{MO} \] (maximum operating)
- Sea level to 28,000 ft. 275 KIAS
- M_{MO} above 28,000 ft. 0.7 Mach

\[ V_{FE} \] (maximum flap extended)
- 10 degrees (takeoff) 200 KIAS
- 26 degrees (takeoff/landing) 160 KIAS
- 36 degrees (landing) 145 KIAS

\[ V_{MC} \] (minimum control speed)
- For takeoff 97 KIAS

Note – The value presented above refers to the maximum \( V_{MC} \) for the aircraft envelope (the value can change according to the temperature, altitude, weight, and takeoff flaps)

\[ V_{LO} \] (landing gear operating)
- Gear Retract and Extend 180 KIAS

\[ V_{LE} \] (landing gear extended) 275 KIAS

Maximum tire ground speed 139 Knots

Center of Gravity Limits:
Forward Limits:
Takeoff and Landing (landing gear extended)
Linear variation from 232.24 in. aft of datum (35% MAC) at 6614 lb. to 223.53 in. aft of datum (21.5% MAC) at 7099 lb.; linear variation from 223.53 in. aft of datum (21.5% MAC) at 7099 to 8885 lb.; linear variation from 223.53 in. aft of datum (21.5% MAC) at 8885 lb. to 224.88 in. aft of datum (23.6% MAC) at 10582 lb.; linear variation from 224.88 in. aft of datum (23.6% MAC) at 10582 to 10626 lb.

In-Flight extension
From 232.53 in. aft of datum (21.5% MAC) at 7099 lb to 222.24 in. aft of datum (19.5% MAC) at 7099 lb.; linear variation from 222.24 in. aft of datum (19.5% MAC) at 7099 to 8885 lb.; linear variation from 222.24 in. aft of datum (19.5% MAC) at 8885 lb. to 233.41 in. aft of datum (36.8% MAC) at 10582 lb.

Aft Limits:
Takeoff and Landing (landing gear extended)
Linear variation from 232.24 in. aft of datum (35.0% MAC) at 6614 lb. to 234.50 in. aft of datum (38.5% MAC) at 7540 lb.; linear variation from 234.50 in. aft of datum (38.5% MAC) at 7540 to 8885 lb.; linear variation from 234.50 in. aft of datum (38.5% MAC) at 8885 lb. to 233.41 in. aft of datum (36.8% MAC) at 10582 lb.; linear variation from 233.41 in. aft of datum (36.8% MAC) at 10582 to 10626 lb.

Landing Gear retracting moment: (-1530.22 in.-lb.)
Datum:
98.82 in. forward of the jig point (nose jack pad location)

Leveling Means:
Located in the main door between frames 9 and 10 (see AMM for further information)

Maximum Weight
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Takeoff</td>
<td>10,472 lb.</td>
</tr>
<tr>
<td></td>
<td>10,582 lb. (see NOTE 11)</td>
</tr>
<tr>
<td>Landing</td>
<td>9,766 lb.</td>
</tr>
<tr>
<td></td>
<td>9,877 lb. (see NOTE 11)</td>
</tr>
<tr>
<td>Zero Fuel</td>
<td>8,444 lb.</td>
</tr>
<tr>
<td></td>
<td>8,775 lb. (see NOTE 9)</td>
</tr>
<tr>
<td></td>
<td>8,554 lb. (see NOTE 11)</td>
</tr>
<tr>
<td></td>
<td>8,885 lb. (see NOTE 9 and NOTE 11)</td>
</tr>
<tr>
<td>Ramp</td>
<td>10,516 lb.</td>
</tr>
<tr>
<td></td>
<td>10,626 lb. (see NOTE 11)</td>
</tr>
</tbody>
</table>

Minimum Crew for all Flights (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 FAA Approved Airplane Flight Manual
OR
One pilot and one copilot

No. of Seats:

Maximum Baggage:
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward baggage compartment</td>
<td>66 lb. (+45.47 in. aft of datum)</td>
</tr>
<tr>
<td>Aft baggage compartment</td>
<td>353 lb. (+314.29 in. aft of datum)</td>
</tr>
<tr>
<td>RH forward cabinet</td>
<td>55 lb. (+143.46 in. aft of datum)</td>
</tr>
<tr>
<td>LH aft cabinet</td>
<td>33 lb. (+249.76 in. aft of datum)</td>
</tr>
</tbody>
</table>

Fuel Capacity (usable):
Total usable fuel 2,806 lb.
Two wing tanks with 1,403 lb. usable each; +230.91 in. aft of datum;
(see NOTE 1 for unusable fuel)

Oil Capacity (total):
Tank mounted on each engine: 4.23 U.S. quarts (4.00 liters) total each engine; +302.52 in. aft of datum; (see NOTE 1)

Maximum Operating Altitude:
41,000 ft.

Control Surface Movements:
<table>
<thead>
<tr>
<th></th>
<th>Up</th>
<th>Down</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevator</td>
<td>27 +1/-1 degrees</td>
<td>19 +1/-1 degrees</td>
</tr>
<tr>
<td>Elevator Trim Tab</td>
<td>6 +1/-1 degrees</td>
<td>13 +1/-1 degrees</td>
</tr>
</tbody>
</table>
Control Surface Movements, Continued:

<table>
<thead>
<tr>
<th>Surface</th>
<th>Direction</th>
<th>Degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rudder</td>
<td>Right</td>
<td>27 +1/-1</td>
</tr>
<tr>
<td></td>
<td>Left</td>
<td>27 +1/-1</td>
</tr>
<tr>
<td>Rudder Trim Tab</td>
<td>Right</td>
<td>16.5 +1/-1</td>
</tr>
<tr>
<td></td>
<td>Left</td>
<td>16.5 +1/-1</td>
</tr>
<tr>
<td>Aileron</td>
<td>Up</td>
<td>25 +1/-1</td>
</tr>
<tr>
<td></td>
<td>Down</td>
<td>15 +1/-1</td>
</tr>
<tr>
<td>Aileron Trim Tab</td>
<td>Up</td>
<td>20 +1/-1</td>
</tr>
<tr>
<td></td>
<td>Down</td>
<td>20 +1/-1</td>
</tr>
<tr>
<td>Wing Flap</td>
<td>TO</td>
<td>10 +1/-1</td>
</tr>
<tr>
<td></td>
<td>TO/Land</td>
<td>26 +1/-1</td>
</tr>
<tr>
<td></td>
<td>Land</td>
<td>36 +1.5/-1.5</td>
</tr>
<tr>
<td>Ground Spoilers/</td>
<td>Up</td>
<td>31.5 +1/-1 (see NOTE 10)</td>
</tr>
<tr>
<td>Speed Brake</td>
<td></td>
<td>35 +1/-1 (see NOTE 11)</td>
</tr>
</tbody>
</table>

See Airplane Maintenance Manual (AMM) for rigging instructions.

Manufacturer's Serial Numbers:
50000005 and up

Import Requirements:
A U.S. airworthiness certificate may be issued on the basis of a Brazilian Certificate of Airworthiness for Export signed by a representative of the Agência Nacional De Aviação Civil (ANAC) containing the following statement: "The aircraft covered by this certificate has been examined and found to comply with U.S. Type Certificate No. A59CE and to be in a condition for safe operation."

Certification Basis - Model EMB-500:
(1) Part 23 of Title 14 of the Code of Federal Regulations effective February 1, 1965, as amended by Amendments 23-1 through 23-55
(2) Part 36 of Title 14 of the Code of Federal Regulations effective December 1, 1969, as amended by Amendments 36-1 through 36-28
(3) Part 34 of Title 14 of the Code of Federal Regulations effective September 10, 1990, as amended by Amendments 34-1 through 34-3
(4) Special Conditions as follows:
   (a) 23-220-SC, High Fuel Temperature
   (b) 23-221-SC, Fire Extinguishing for Aft Mounted Engines
   (c) 23-228-SC, Full Authority Digital Engine Control (FADEC) System
   (d) 23-282-SC, Protection of Systems for High Intensity Radiated Fields (HIRF)
   (e) 23-232-SC, Flight Performance, Flight Characteristics, and Operating Limitations
   (g) 23-255-SC, Single-Place Side Facing Seat Dynamic Test Requirements, issued October 12, 2011
Certification Basis, Continued:

(5) Equivalent levels of safety as follows:
   (a) ACE-08-09: 14 CFR § 23.1555(d)(1), Control Markings - Usable Fuel Capacity
   (b) ACE-08-10: 14 CFR §§ 23.1305, 23.1309, 23.1321 and 23.1549; Digital Only Display of N2
   (c) ACE-08-14: 14 CFR § 23.807(e)(2): Emergency Egress Provision During Ditching
   (d) ACE-08-21: 14 CFR § 23.1553: Digital Fuel Quantity Indication

(6) Exemption as follows:
   (a) No. 9549 (amended) granted to use a relaxed “Dutch Roll” damping criteria above 18,000 ft. in lieu of damping criteria of 14 CFR § 23.181(b), issued June 12, 2008, Regulatory Docket No. FAA-2007-28646, ACE-00-388-E

(7) Compliance with ice protection has been demonstrated in accordance with 14 CFR § 23.1416 and 23.1419.

(8) Compliance with the provisions for ditching equipment has been demonstrated in accordance with 14 CFR § 23.1415(a)(b).

Type Certificate A59CE issued December 12, 2008.

Application for type certificate dated October 5, 2005.

RVSM Approval: S/N 50000005 and on: All airplanes are equipped with Garmin G1000 dual RVSM capable Air Data Computers and pilot’s and copilot’s Primary Flight Displays as standard equipment. Each operator must obtain RVSM operating approval directly from the FAA.

Production Basis:
Production Certificate No. 346CE

The manufacturer Embraer Executive Aircraft Inc. located in Melbourne, Florida, is licensed by Embraer S.A. to manufacture the Model Aircraft listed in this Type Certificate Data Sheet. S/N 50000255 and subsequent may be produced either by Embraer Executive Aircraft Inc. in Melbourne, Florida or Embraer S.A. in Brazil. The manufacturer can be confirmed by the aircraft data plate. Aircraft produced by Embraer Executive Aircraft Inc. in Melbourne, Florida with a S/N 50000246, 50000255, 50000265, and 50000267 were produced under the Type Certificate.

Equipment:
The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane for certification.

Service Information:
Service bulletins, structural repair manuals, vendor manuals, AFMs, and overhaul and maintenance manuals, which contain a statement that the document is approved by ANAC are accepted by the FAA and are considered FAA approved. (These approvals pertain to the design data only).
NOTES:

NOTE 1. A current weight and balance report, including a list of equipment included in the certificated empty weight, and loading instructions when necessary 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: 44 lb. at +228.90 in. aft of datum
- Full oil: 17.64 lb. at +302.52 in. aft of datum; includes the oil from the engine installation (filters and lines)
- Hydraulic Fluid: 3.09 lb. at +34.17 in. aft of datum; 13.86 lb. at +51.18 in. aft of datum (See NOTE 11)

NOTE 2. Airplanes must be operated according to the FAA Approved Airplane Flight Manual (AFM), part number AFM-2656 dated December 12, 2008 or later approved revision. Required placards and markings are listed in Chapter Eleven (11) of the Aircraft Illustrated Parts Catalog (AIPC) and Airplane Maintenance Manual (AMM).


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 14 CFR §§23.2, 23.561, 23.562, and 23.785.

The foam cushion buildup of all seats (crew and passenger) may not be altered. Any deviations in the foam construction or stiffness must be demonstrated by test or analysis to comply with the 14 CFR 23.562 paragraph.

NOTE 5. Approval for operation with a minimum crew of one pilot is based upon the cockpit equipment installation and arrangement evaluated during FAA 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.

NOTE 7. Aircraft serial numbers 50000005 thru 5000217 are considered the Enhanced Version. For aircraft serial numbers 50000218 and up, the placard in the cockpit must be checked to determine the correct version.

NOTE 8. Post SB 500-73-0001 incorporation.

NOTE 9. Post SB 500-00-0005 incorporation or with an equivalent factory-incorporated mod.


NOTE 11. Post SB 500-00-0009 incorporation or with an equivalent factory-incorporated mod.

END