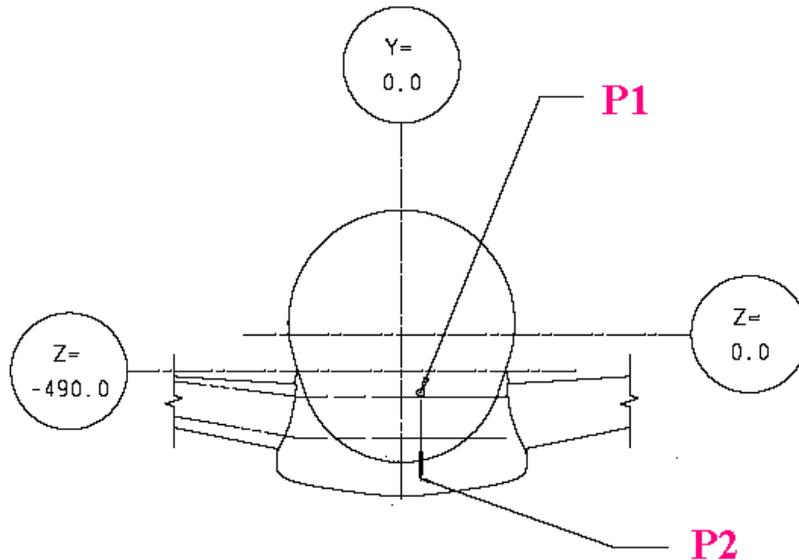


| | | | |
|---------------------------------|--|-------------|--|
| <u>Airspeed Limits (I.A.S.)</u> | V_{MO} | | 300 KIAS from sea level to 8,000 ft increasing linearly to 320 KIAS at 10,000 ft. |
| | V_{MO} M_{MO} | | 320 KIAS from 10,000 ft to 28,887 ft. 0.82 Mach from 28,887 ft to 41,000 ft. |
| | V_A (Maneuvering) | | 250 KIAS from sea level increasing linearly to 286 KIAS at 25,590 ft., and increasing linearly to 295 KIAS at 32,684 ft. |
| | V_A (Maneuvering) | | 0.82 Mach from 32,684 ft to 41,000 ft. |
| | V_{FE} (Flaps Extended) (IAS up to 25,590 ft) | Detent 1 | 230 KIAS |
| | | Detent 2 | 215 KIAS |
| | | Detent 3 | 200 KIAS |
| | | Detent 4 | 180 KIAS |
| | | Detent 5 | 180 KIAS |
| | | Detent FULL | 165 KIAS |
| | Maximum Landing Gear Operating Speed (V_{LO}): | | |
| | | Retraction | 250 KIAS |
| | | Extension | 265 KIAS |
| | Maximum Landing Gear Extended Speed (V_{LE}): 265 KIAS | | |
| | Tire Speed | | 225 MPH |

Datum A perpendicular plane to the fuselage centerline, located at 14 443 mm ahead of the wing stub front spar. This spar is located 414 mm ahead of the wing jack points.

Mean Aerodynamic Chord The MAC length is 3682 mm.

Leveling Means Plumb line between the points P1 and P2 located inside of the landing gear compartment on the left side, as illustrated below.



| LEVELING OF FUSLG COORDINATE POINTS | | | |
|-------------------------------------|----------|---------|----------|
| POINT | X | Y | Z |
| P1 | 17955.20 | -250.00 | -774.872 |
| P2 | 17955.20 | -250.00 | -1683.47 |

Center of Gravity Limits

Refer to AFM No. AFM-1912.

Maximum Weights

| | |
|-----------------------|--------------------------|
| Max Ramp Weight: | 105,712 lbf (47,950 kgf) |
| Max Takeoff Weight: | 105,359 lbf (47,790 kgf) |
| Max Landing Weight: | 94,799 lbf (43,000 kgf) |
| Max Zero Fuel Weight: | 89,948 lbf (40,800 kgf) |

Maximum Baggage

| | |
|---------------------------|----------------------|
| Forward Cargo Compartment | 4,078 lb (1,850 kgf) |
| Aft Cargo Compartment | 3,638 lb (1,650 kgf) |

Fuel Capacity

4,267 gallons (16,152.6 liters) in two tanks of 2,133 gallons (8,076.3 liters) each.
 Unusable fuel of 29.96 gallons (113.4 liters) (56.7 liters at 0.811 kg/liter in each tank).

Minimum Crew

2 - Pilot and Copilot.

Maximum Passenger Seating Capacity 108 maximum.Oil Capacity

Oil capacity per Engine:
 Total: 21.4 liters (22.7 US quarts)
 Useable: 15.8 liters (16.8 US quarts)

Maximum Altitudes

41,000 ft. (operating)
 10,000 ft. (takeoff and landing)

Control Surface Movements

| | | | |
|------------------|-------------------------|---------------|--------------------|
| Ailerons | 25° TE up, 15° TE down | | |
| Elevator | 25° TE up, 18° TE down | | |
| Stabilizer | 11° TE up, 4° TE down | | |
| Rudder | 31.5° right, 31.5° left | | |
| Ground Spoiler | 60° | | |
| Outboard Spoiler | 40° | | |
| Flap and Slat | | | |
| Detent | Inboard Flap | Outboard Flap | Slat 1/Slat 2,3,&4 |
| | Main/Aft | Main/Aft | |
| 0 | 0°/0° | 0° | 0°/0° |
| 1 | 7.07°/15.36° | 7.04° | 12°/15° |
| 2 | 10.11°/16.62° | 10.06° | 12°/15° |
| 3 | 20.20°/19.18° | 19.99° | 12°/15° |
| 4 | 20.20°/19.18° | 19.99° | 20°/25° |
| 5 | 20.20°/19.18° | 19.99° | 20°/25° |
| Full | 37.07°/22.01° | 36.49° | 20°/25° |

Deflections are in the planes normal to the hinge lines, except for the flaps, which are in stream wise planes normal to the wing reference plane. Deflections of a surface supported by another moveable surface are relative to the parent surface. Stabilizer deflections are relative to the airplane horizontal reference. Elevator and rudder maximum deflections are scheduled by the flight control system as a function of airspeed; the data presented herein correspond to zero airspeed. See AMM for control surface deflection tolerances.

Serial Numbers

190-00004, 190-00006 and subsequent.

II. Model ERJ 190-100 LR (Transport Category Airplane) approved on September 2, 2005

Same as model ERJ 190-100 STD, except for the following items:

| | | |
|------------------------|-----------------------|--------------------------|
| <u>Maximum Weights</u> | Max Ramp Weight: | 111,255 lbf (50,460 kgf) |
| | Max Takeoff Weight: | 110,892 lbf (50,300 kgf) |
| | Max Landing Weight: | 94,799 lbf (43,000 kgf) |
| | Max Zero Fuel Weight: | 89,949 lbf (40,800 kgf) |

Center of Gravity Limits Refer to AFM No. AFM-1912.

III. Model ERJ 190-100 IGW (Transport Category Airplane) approved on September 2, 2005

Same as model ERJ 190-100 LR, except for the following items:

| | | |
|------------------------|-----------------------|--------------------------|
| <u>Maximum Weights</u> | Max Ramp Weight: | 114,552 lbf (51,960 kgf) |
| | Max Takeoff Weight: | 114,199 lbf (51,800 kgf) |
| | Max Landing Weight: | 97,003 lbf (44,000 kgf) |
| | Max Zero Fuel Weight: | 90,169 lbf (40,900 kgf) |

Center of Gravity Limits Refer to AFM No. AFM-1912.

DATA PERTINENT TO ALL MODELS EXCEPT AS INDICATED

Import Requirements To be considered eligible for operation in the United States, each aircraft manufactured under this type certificate must be accompanied by a certificate of airworthiness for export or certifying statement endorsed by the exporting foreign civil airworthiness authority which states (in the English language): The [insert aircraft model and series] covered by this certificate conforms to the type design approved under U.S. Type Certificate No. A57NM, TCDS Revision [insert number], dated [insert date] and is found to be in a condition for safe operation.

Certification Basis **14 CFR part 25**, effective February 1, 1965, including the following amendments:

- Amendments 25-1 through 25-101 in entirety;
- Amendment 25-102, §§ 25.981(a) and (b), H25.4 only;
- Amendments 25-103 through 25-105 in entirety;
- Amendment 25-107, § 25.731(d) and (e); § 25.735(a) through (g), and (i) through (k) only;
- Amendments 25-108 through 25-110 in entirety;
- Amendments 25-112 through 25-114 in entirety; and
- Amendments 25-117 in entirety.

Special Conditions:

- No. 25-296-SC, consisting of the following subjects:
- Interaction of Systems and Structure;
 - Limit Engine Torque Loads for Sudden Engine Stoppage;
 - Control Surface Position Awareness;
 - Performance Credit for ATTCS During Go-Around;
 - High Intensity Radiated Fields (HIRF); and
 - Operations without Normal Electrical Power.

NOTE: The FAA Special Conditions referenced above may be accessed at internet location:

http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgSC.nsf/MainFrame?OpenFrameSet

Equivalent Level of Safety Findings:

- § 25.331(c)(2): Pitch Maneuver Conditions (documented in TAD ELOS Memo TC0099IB-T-A-10)
- §§ 25.1301, 25.1309: Equipment, Systems, and Installations (documented in TAD ELOS Memo TC0099IB-T-S-13)
- § 25.933(a)(1)(ii): Flight Critical Thrust Reverser (documented in TAD ELOS Memo TC0099IB-T-P-3)
- 14 CFR part 25 subparts E, F, & G requirements applicable to APU installations: APU Certification Rules (documented in TAD ELOS Memo TC0099IB-T-P-4)
- 14 CFR part 25 Appendix I25.4(a): ATTCS - Reduction in initial power setting to less than 90% of takeoff thrust (documented in TAD ELOS Memo TC0099IB-T-F-28)
- 14 CFR part 25 Appendix I25.5(b)(4): ATTCS - Deactivation control (documented in TAD ELOS Memo TC0099IB-T-P-10)
- § 25.1305(c)(3): Digital Only Display of Turbine Engine High/Intermediate Pressure Rotor Speed (documented in TAD ELOS Memo TC0099IB-T-P-18)
- §§ 25.1389(b), 25.1391, 25.1393, 25.1395: Position Light Intensities (documented in TAD ELOS Memo TC0099IB-T-S-34)
- § 25.831(g): Humidity Requirement (documented in TAD ELOS Memo TC0099IB-T-S-36)
- Emergency Exit Locator Sign (documented in TAD ELOS Memo TC0099IB-T-C-9)

NOTE: The FAA Equivalent Level of Safety Memos referenced above may be accessed at internet location:

http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgELOS.nsf/MainFrame?OpenFrameSet

Exemptions:

- Exemption No. 8613, 14 CFR part 25, Section 25.901(c) Uncontrollable High Thrust; and
- Exemption No. 8612, 14 CFR part 25, Section 25.841(a)(2)(i) and (ii) Pressurized Cabin.

The FAA Exemptions referenced above may be accessed at internet location:

http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgEX.nsf/MainFrame?OpenFrameSet

Optional Requirements complied with:

- | | |
|-----------------------------|---|
| - Section 25.801 | Ditching; |
| - Sections 25.1411, 25.1415 | Safety equipment required for ditching certification; |
| - Section 25.1403 | Wing icing detection lights; |
| - Section 25.1419 | Ice protection; and |
| - Section 25.1421 | Megaphones. |

Environmental Standards complied with:

- FAR Part 36 effective December 1, 1969, including Amendments 36-1 through 36-24;
- FAR Part 34 effective September 10, 1990, including all amendments effective on the TC date.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see the Certification Basis) must be installed in the aircraft. The lists of all equipment as well as optional approved equipment are contained in the Embraer document:

Type Design Standard Document No. 190-100TDSD

Airplane Flight Manual

CTA approved Airplane Flight Manual AFM-1912.

Service Information

Service bulletins, repair instructions (letters, drawings, specifications, forms used for transmitting repair descriptions, etc.), structural repair manuals, airplane flight manuals, vendor manuals, and overhaul and maintenance manuals that are published in the English language and indicate applicability to the U.S. approved type designs included in this Type Certificate and that include a statement "CTA Approved" are accepted by the FAA and are considered "FAA Approved."

Additionally, changes to type design that are approved by CTA designated engineering representatives via CTA form FDH-200-06 are also considered FAA approved.

NOTES:

NOTE 1: Weight and balance. Current weight and balance report including a form of weight and list of equipment included in certificated empty weight and loading instructions must be provided for each aircraft at the time of original certification.
The certificated basic empty weight and corresponding center of gravity location must include the total engine oil, hydraulic fluid and unusable fuel.

NOTE 2: All the life limitations are provided in the "Appendix D", "Airworthiness Limitation Items (ALI) – System and Powerplant" of the document MRB-1928.
The mandatory structure certification maintenance requirements, raised from the damage tolerance analysis, are listed in the "Appendix B - Airworthiness Limitation Items (ALI) Structures" of the document MRB-1928.
The mandatory systems certification maintenance requirements, raised from the safety analysis, are listed in the "Appendix A – Certification Maintenance Requirements (CMR)" of the document MRB-1928.
The Structures Repair Manual SRM-1929 is approved and controlled by CTA, and all Service Bulletins issued by Embraer are approved by CTA. An approval statement is stamped in each Service Bulletin.

NOTE 3: The systems containing User Modifiable Data are:
- User Partition of the Owner Requirements Table (ORT) of the SATCOM (Satellite Communication System);
- Airline Modifiable Information (AMI) of the Communication Management Function (CMF);
- System Setting Data - Airline Operational Data (APM) System Setting Data (Airline Operational Data); and
- User Application of the Aircraft Condition Monitoring Function (ACMF).

User Modifiable Data is not approved as part of the type design.

NOTE 4: Any new interior configuration affecting the cockpit door access area, including adjacent structures such as galleys and wardrobes, must be submitted for FAA Aircraft Certification Office (ACO) approval, specifically for compliance with 14 CFR 25.809(b). FAA ACO's should coordinate any such changes with the TC issuing office (ANM-116).

NOTE 5: The Model ERJ 190-100 xx is often referred to in Embraer marketing literature as the "Embraer 190 xx", with the appropriate model (LR, STD, etc.) substituted for the "xx". This name is strictly marketing designation and is not part of the official model designations. The exception to this rule is the Model ERJ 190-100 IGW, which has been given the marketing designation Embraer 190 AR.

NOTE 6: As stated in Exemption No. 8613 (ERJ 190) the FAA has concluded that the occurrence of any uncontrollable high thrust failure condition or any of the associated causal failures listed below, are reportable under §§ 121.703 (c), 125.409 (c), and 135.415(c):
- FADEC – Full Authority Digital Engine Control
- TCQ – Thrust Control Quadrant
- FMU – Fuel Metering Unit

NOTE 7:

The CF34-10E engines configuration, according to the designation presented in the Engine Parts List, must follow the suffix Gxx. To the ERJ 190-100 model, the following designation list is approved for operation (mixing of different engine configurations on the same airplane is permitted for the listed pairs only):

- CF34-10E6G03 and CF34-10E6G05
- CF34-10E6A1G03 and CF34-10E6A1G05
- CF34-10E5G03 and CF34-10E5G05
- CF34-10E5A1G03 and CF34-10E5A1G05

Engine configuration part numbers ECP 2041M42P02, -P06, -P08, and -P09 are not permitted on any ERJ 190 CF34-10E engines configuration.

...END...