European Aviation Safety Agency

EASA

TYPE-CERTIFICATE DATA SHEET

Embraer ERJ 190

Manufacturer: Embraer

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

For models:
ERJ 190-100 STD
ERJ 190-100 LR
ERJ 190-100 IGW
ERJ 190-100 ECJ
ERJ 190-100 SR
ERJ 190-200 STD
ERJ 190-200 LR
ERJ 190-200 IGW

Issue 11, 21 October 2010

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SECTION 1: GENERAL (ALL VARIANTS)

1. **Data Sheet No**: A.071

2. **Airworthiness Category:** Large Aeroplanes

3. **Performance Category:** A

4. **Certifying Authority:** Agência Nacional De Avição 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

5. **Type Certificate Holder**: **Embraer**
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

6. **ETOPS**

The Type Design, system reliability and performance of the ERJ 190-100ECJ model (commercially known as Lineage 1000) was found capable for Extended Range Operations iaw AMC 20-6 as documented in CRI G-2, when configured, maintained and operated in accordance with the current revision of the ETOPS Configuration, Maintenance and Procedures (CMP) document, CMP-2926.
This finding does not constitute an approval to conduct Extended Range Operations (operational approval must be obtained from the responsible Authority).

SECTION 2 (EMBRAER ERJ 190-100 VARIANT)

I. General

1. **Aeroplane:** Embraer ERJ 190-100
(see Note 2)

2. **EASA Validation Application Date:** 30 March 2003
(Reference date for EASA validation)

3. **EASA Validation Date:** 30 June 2006
(JAA recommendation)

II. Certification Basis

1. **Reference Date for ANAC Certification:** 30 May 2001

2. **ANAC Certification Date:** 30 August 2005

ANAC Type Certificate Data Sheet No. EA-2005T13

3. **ANAC Certification Basis:** RBHA 25 - Requisitos de Aeronavegabilidade. Aviões de transporte (Airworthiness Standards. Transport Category Airplanes), corresponding to U.S. 14 CFR Part 25, including amendments 25-1 through to 25-120, except section 25.981(c) of Amdt 25-102, Amdt 25-106, Section 25.735(h) of Amdt 25-107, Amdt 111, Amdt 115, Amdt 116, Amdt 118 and Amdt 119. (Reference to FCAR HT-01)

Note: The ERJ 190-100 ECJ (Commercially known as Lineage 1000) auxiliary fuel tanks comply with the requirement 25.981(c) of Amendment FAR 25-102.

4. **EASA Airworthiness Requirements:**

4.1 Applicable JAR Requirements at the Reference Date:

JAR-25 Change 15 (Effective 01 October 2000)
CS-AWO

Note: The ERJ 190-100 ECJ auxiliary fuel tanks comply with the requirement 25.981 of Amendment FAR 25-102.

4.2 Reversions: None Identified

5. **EASA Special Conditions:**

The following Special Conditions have been applied.

JAA/170/SC/CRI 170/B-12	Angle of Attack Limiting Function
JAA/170/SC/CRI 170/B-15	Electronic Flight Control System: Control Surface Position Awareness
JAA/190/SC/CRI 190/E-16	Engine and APU Intakes Icing
JAA/170/SC/CRI 170/F-14	Air Data System (Smart Probes)
JAA/170/SC/CRI 170/F-16	IRS: Align in Motion
EASA/170/SC/CRI 170/F32	Head Up Guidance System
JAA/170/SC/CRI 170/D-02	Towbarless Towing (Ref: PNPA 25D-275)
JAA/170/SC/CRI 170/C-03	Interaction of Systems and Structure (NPA 25C-199)
JAA/170/SC/CRI 170/C-15	Structural/Control Jam Conditions (JAR 25.671(c) (3)
JAA/170/SC/CRI 170/C-17	Static Strength Criteria for Engine Failure Loads
JAA/170/SC/CRI 170/E-08	Engine Sustained Imbalance
JAA/170/SC/CRI 170/E-10	Uncontrolled Thrust Increase
JAA/170/SC/CRI 190/E-18	Reversing System Requirements
JAA/170/SC/CRI 170/F-01	Protection from the effects of HIRF JAA Interim Policy INT/POL/25/2 Issue 2
JAA/170/SC/CRI 170/F-15	On Board Databases JAR 25.1301, 25.1309, TGL Nº9/10, ED-12B/DO-178B, ED-76/DO-200A
EASA/190/SC/CRI 190/D-30	In-Flight Accessible Class C Baggage Compartment
EASA/190/SC/CRI 190/D-37	Isolated Compartments

EASA/170/SC/CRI 170/D-38	Application of heat release and smoke density requirements to seat materials
EASA/190/SC/CRI 190/D-39	VIP Cabin Interior / Shower installation
EASA/190/SC/CRI 190/H-01	Enhanced Airworthiness Programme for Aeroplane Systems - ICA on EWIS

6. **EASA Deviations:**

EASA/190/Deviation/CRI 190/D-29	Emergency Exit Marking
EASA/190/Deviation/CRI 190/D-31	Installation of Door between passenger compartments
EASA/190/Deviation/CRI 190/D-32	Side Facing Divan
EASA/190/Deviation/CRI 190/D-23	Firm Handhold

7. **EASA Equivalent Safety Findings:**

The following Equivalent Safety Findings have been granted:

JAA/170/ESF/CRI B-17	Performance information for take-off on contaminated Runways Equivalent Safety with JAR 25x1591and AMJ 25x1591
JAA/170/ESF/CRI C-04	Vibration Buffet and Aeroelastic Stability Equivalent Safety with JAR 25.629 and NPA 25BCD-236
JAA/170/ESF/CRI C-21	Fuel Tank Crashworthiness Equivalent Safety with JAR 25.963(d) and JAR 25.561
JAA/170/ESF/CRI D-05	Hydraulic Systems Equivalent Safety with JAR 25.1435
JAA/170/ESF/CRI D-06	Wheels and Brakes Equivalent Safety with JAR 25.731 and JAR 25.735
JAA/170/ESF/CRI D-07	Fuselage Doors Equivalent Safety with JAR 25.783
JAA/170/ESF/CRI D-17	Type and Number of Passenger Emergency Exits Equivalent Safety with JAR 25.783, 25.785, 25.807, 25.809, 25.811, 25.812, 25.813, and 25.820
JAA/170/ESF/CRI D-18	Packs Off Take Off Equivalent Safety with JAR 25.831(a)
JAA/170/ESF/CRI D-19	Reinforced Security Cockpit Door Equivalent Safety with JAR 25.305(b), 25.307(a), 25.356, 25.771, 25.772, 25.789(a), 25.803, 25.809,25.831, 25.853(a), 25.1301, and 25.1309
JAA/170/ESF/CRI 190/D-23	Thermal Acoustic Linings (ESF) Equivalent Safety with JAR25.853(a)
JAA/170/ESF/CRI 190/D-27	Tyre Speed Rating Equivalent Safety with JAR 25.733
JAA/170ESF/CRI 190/D-28	Seat Mounted Items of Mass/ Cabin Surveillance Systems/Bulkhead Exit Signs Equivalent Safety with JAR 25.562, 25.785, 25.773(a)(2), 25.777(a), 25.811(d)(3), 25.1301, 25.1309
JAA/170/ESF/CRI 190/E-13	Powerplant Installation Safety Assessments Equivalent Safety with JAR 25.901(c), 25.1309 (NPA 25E-337)
JAA/170/ESF/CRI F-12	Equipment, Systems and Installation Requirements

	Equivalent Safety with JAR NPA 25F-281
JAA/170/ES/CRI F-26	Honewell Primus EPIC Integrated Modular Avionics System (Compliance with requirements for individual circuit protection) Equivalent Safety with JAR 25.1357(e) and JAR 25.1309
JAA/170/ESF/CRI 190/F-32	Position Light Intensities Equivalent Safety with JAR 25. 1389(b), 25.1391, 25.1393, and 25.1395
JAA/170/ES/CRI J-05	APU Installation Equivalent Safety with JAR 25 Subpart J
JAA/170/ES/CRI J-06	APU Instrument Markings Equivalent Safety with JAR 25J.1549

8. **EASA Environmental Standards:**

Noise:	ICAO Annex 16, Volume I (Third Edition)
Fuel:	ICAO Annex 16, Volume II (Second Edition)

III. Technical Characteristics and Operational Limitations

1. **Production Basis:** Manufactured under Type certificate

2. **Design Standard:** Defined by Report 190-100TDSD_EASA "Type Design Standard Document" at Revision –
Defined by 190-100TDSD_ECJ Revision A - Type Design Standard Document for model ECJ

3. **Description:** Low wing jet transport with a conventional tail unit configuration, powered by two high bypass turbofan engines mounted on pylons beneath the wings.

The structure is conventional, with an aluminum-alloy fuselage, wing, tail-plane and fin; while ailerons, flaps, spoilers, elevator, and rudder are of composite material. The landing gear is retractable tricycle type, and twin wheeled, with carbon main landing gear wheel brakes.

4. **Dimensions:**

Length	36.24 m	(118 ft 10 in)
Span	28.72 m	(94 ft 3 in)
Height	10.57 m	(34 ft 8 in)
Wing Area	92.53 m^2	(996 ft^2)

5. **Engines:** Two General Electric CF34-10E5, CF34-10E5A1, CF34-10E6 ,CF34-10E6A1 and CF34-10E7 Turbofan Engines (see Note 1). The engine applicable for the ERJ 190-100 ECJ is the CF34-10E7-B. The engines applicable for the ERJ 190-100 SR are the CF34-10E5A1 and CF34-10E7.

Limitations: See EASA Engine TCDS No. IM.E.021 or Airplane Flight Manual

6. **Auxiliary Power Unit:** Hamilton Sundstrand APS2300
Limitations: Refer to the APU TCDS / TSO

7. **Propellers:** N/A

8. **Fuel:** Refer to applicable approved manuals

9. **Oil:** Refer to applicable approved manuals

10. **Airspeeds:** See Airplane Flight Manual

11. **Maximum Operating Altitude:** 12, 497 m (41,000 ft) pressure altitude

12. **All Weather Capability:** Cat II, CATIIIa Autoland without Rollout, Head-Up Guidance System with LVTO/CATIIIa/Rollout

13. **Maximum Certified Weights:**

Phase	190-100STD		190-100 LR		190-100 IGW		190-100 ECJ	
Taxi and Ramp	105706 lb	47950 kg	111239 lb	50460 kg	114546 lb	51960 kg	120591 lb	54700 kg
Take-off	105353 lb	47790 kg	110892 lb 105359 lb(1)	50300 kg 47790 kg (1)	114199 lb	51800 kg	120150 lb	54500 kg
Landing	105816 lb	43000 kg	94794 lb	43000 kg	96998 lb	44000 kg	100970 lb	45800 kg
Zero Fuel	89944 lb	40800 kg	89944 lb	40800 kg	90164 lb	40900 kg	80467 lb	36500 kg

Phase	190-100 SR	
Taxi and Ramp	101 743 lb	46 150 kg
Take-off	101 390 lb	45 990 kg
Landing	105816 lb	43000 kg
Zero Fuel	89944 lb	40800 kg

(1) If post-mod SB 190-00-0012

14. **Centre of Gravity:** See Airplane Flight Manual

15. **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 point.

16. **Mean Aerodynamic Chord (MAC):** 3.682 m (12ft. 1 in.)

17. **Levelling Means:** See Weight and Balance manual

18. **Minimum Flight Crew:** Two (Pilot and Co-pilot) for all types of flight

19. **Maximum Passenger Capacity:** 114 Passengers
The ERJ 190-100 ECJ is limited to 19 Passengers (see Note 4)
The ERJ 190-100 SR is limited to 98 Passengers

20. **Exits all 190-100 models except 190-100 ECJ** (Lineage 1000)**:**

	Number	Type	Size mm (inches)
1 Main Fwd LH	1	Type I	780 mm (w) x 1840 mm (h)
2 Main Aft LH	1	Type I	670 mm (w) x 1814 mm (h)
3 Overwing Emergency Doors (LH)	1	Type III	530 mm (w) x 1032 mm (h)
4 Overwing Emergency Doors (RH)	1	Type III	530 mm (w) x 1032 mm (h)
5 Service (Fwd, RH)	1	Type I	640 mm (w) x 1380 mm (h)
6 Service (Aft RH)	1	Type 1	670 mm (w) x 1395 mm (h)

The **ERJ 190-100 ECJ** has the following exits available:

	Number	Type	Size mm (inches)
1 Main Fwd LH	1	Type I	780 mm (w) x 1840 mm (h)
2 Overwing Emergency Doors (RH)	1	Type III	530 mm (w) x 1032 mm (h)

The Overwing Emergency Doors (LH), the Service Doors (Fwd, RH) and (Aft RH) were locked and not operative. The Main Aft LH is used as Baggage Door. (see Note 4)

Additionally, for crew emergency evacuation purposes, the following exits are available on both sides:

Cockpit side window (2)	Flight Crew Emergency Exit	483 mm x 508 mm

21. **Baggage/Cargo Compartment all 190-100 models except 190-100 ECJ:**

Location	Class	Volume m^3 (ft^3)
Front Fwd (Underfloor)	C	12.5 m^3 (442 ft^3)
Rear Aft (Underfloor)	C	10.1 m^3 (358 ft^3)

Baggage/Cargo Compartment for the ERJ 190-100 ECJ (*):

Location	Class	Max Volume m^3 (ft^3)
Front Fwd (Underfloor)	C	3.42 m^3 (120.77 ft^3)
Rear Aft (main deck)	C	9.14 m^3 (322.77 ft^3)

(*) subject to Cabin completion – see Note 4

22. **Wheels and Tyres:**

Nose Assy (Qty 2) Tyre/Wheel: 24x7.7 16PR / 24x7.7 R10*

Main Assy (Qty 4) Tyre/Wheel: H41x16.0-20 22PR / H41x16.0 R20*
Speed Rating: 225 mph

* The radial tyre is a standard item for ERJ190-100ECJ and an optional item for the other ERJ190-100 models.

IV. Operating and Servicing Instructions

1. **Flight Manual:**

Airplane Flight Manual, Document No. AFM 1913

2. **Mandatory Maintenance Instructions:**

2.1 Aircraft Maintenance Manual (Customised to aircraft configuration)

2.2 Maintenance Review Board Report Ref: MRB 1928, Revision 1 or subsequent JAA approved revision. For the ERJ 190-100 ECJ model the applicable document is the Maintenance Planning Guide (MPG) document 2928.

2.3 Airworthiness Limitations and Certification Maintenance Requirements:

MRB Report P/N 1928:
Appendix A Part 1 (Certification Maintenance Requirements)
Appendix A Part 2 (Airworthiness Limitations Inspections)
Appendix A Part 3 (Fuel System Limitation Items - FSL)
Appendix A Part 4 (Life Limits Items – LLI)

For the ERJ 190-100 ECJ model, the Appendix A (Part 1, 2, 3 and 4) of the Maintenance Planning Guide (MPG) document 2928 must be considerated as reference for mandatory maintenance requirements mentioned above.

2.4 Structural Repair Manual SRM-1929 is applicable. For ERJ 190-100 ECJ the Structural Repair Manual SRM-2773.

3. **Service Letters and Service Bulletins:** As published by Embraer and approved by ANAC.

4. **Required Equipment:** Required equipment is listed in Embraer Document Reference 190CCC009: Embraer ERJ 190 Build Standard for Airplanes to be delivered to European Countries"

V Notes

Note 1 - The CF34-10E5, CF34-10E5A1, CF34-10E6, CF34-10E6A1, CF34-10E7 and CF34-10E7-B engines designation, as presented in the Engine Parts List, must contain the suffix Gxx, which defines the specific engine configuration. For the ERJ 190-100 and ERJ 190-200 models, the following designations are approved for operation: CF34-10E6G03, CF34-10E6A1G03, CF34-10E5G03, CF34-10E5A1G03, CF34-10E6G05, CF34-10E6A1G05, CF34-10E5G05, CF34-10E5A1G05, CF34-10E7G03, CF34-10E7G05, CF34-10E6G07, CF34-10E6A1G07, CF34-10E5G07, CF34-10E5A1G07, CF34-10E7G07, CF34-10E7-G03, CF34-10E7-BG05 and CF34-10E7-BG07.
The engine nameplate may display the model (example: CF34-10E6) and the Gxx suffix (example: G05) in separate fields. CF34-10E Block 2 engines are identified with the suffix "G07"

Note 2 - The models ERJ 190-100 are often referred to in Embraer marketing literature as "EMBRAER 190. The ERJ 190-100 IGW is referred to in Embraer marketing literature as "EMBRAER 190 AR". The ERJ 190-100 ECJ model is frequently mentioned in Embraer marketing literature as "Lineage1000".
These names are strictly marketing designations and are not part of the official models designation.
EASA Approval Dates:
30. June 2006:
ERJ 190-100 STD
ERJ 190-100 LR
ERJ 190-100 IGW

7. November 2007:
ERJ 190-100 ECJ

29. January 2010
ERJ 190-100 SR

Note 3 – The PRIMUS EPIC® Load 4.4 or subsequent approved loads have to be installed. For the ERJ 190-100 ECJ the PRIMUS EPIC® Load 21.4 or subsequent approved loads have to be installed.

Note 4 – The ERJ 190-100 ECJ is initially configured "Green". The "Green Configuration" type design does not include passenger provisions. Carriage of persons in the cabin is permitted when an approved seating arrangement and related required passenger provisions are incorporated in accordance with Doc 190MSD006 "ERJ-100ECJ Completion Guidelines". In relation to demonstrate compliance with Doc 190MSD006, a maximum basic operating weight & payload – for the purpose of fatigue evaluation - of 33.386kg needs to be respected. The EU Type Design requires incorporation of corrective actions iaw EMBRAER letter GCF-2073/2009 dtd. 30.Nov 2009 "corrective action plan".

Commercial Operation under EASA jurisdication:
a) "Green Configuration": Compliance with EU OPS and JAR 26 was demonstrated. .

b) Approved seating arrangement: Demonstration of compliance with EU OPS and JAR 26 is required. Aircraft with Cabin Doors iaw, CRI 190/D-32 are not eligible for commercial operation under EASA rules except if adopted by a suitable approved modification, e.g.. Embraer SB-190LIN-00-005.

Note 5 – The EU type design for ERJ 190-100 ECJ from CJ001 through CJ008 requires incorporation of corrective actions iaw EMBRAER letter GCF-0402/2010 dtd. 14. April 2010, when exported to an EASA member.

Note 6 –The thermal and acoustic insulation material that meets the flammability certification requirement CS 25.856 (b) has been approved for ERJ190-100 and ERJ190-200 models (except ERJ 190-100 ECJ) according to Design Change Approval (DCA) 0190-025-00147-2008/EASA and it was addressed with "Elect to comply" CRI D-24 "Thermal Acoustic Insulation Material.

SECTION 3 (EMBRAER ERJ 190-200 VARIANT)

I. General

1.	**Aeroplane:**	Embraer ERJ 190-200 (see Note 2)
2.	**EASA Validation Application Date:** (Reference date for EASA validation)	30 March 2003
3.	**EASA Validation Date:** (JAA recommendation)	17 July 2006

II. Certification Basis

1.	**Reference Date for ANAC Certification:**	31 December 2001
2.	**ANAC Certification Date:**	30 June 2006

ANAC Type Certificate Data Sheet No. EA-2005T13

3. **ANAC Certification Basis:** RBHA 25 - Requisitos de Aeronavegabilidade. Avioes deTransporte (Airworthiness Standards. Transport Category Airplanes), corresponding to U.S. FAR part 25, including amendments 25-1 through 25-117, except section 25.981(c) of Amdt 25-102, Amdt 25-106, Section 25.735(h) of Amdt 25-107, Amdt 111, Amdt 115 and Amdt 116. (Reference to ERJ 190-200 FCAR HT-01)

4. **EASA Airworthiness Requirements:**

4.1 Applicable JAR Requirements at the Reference Date:

JAR-25 Change 15 (Effective 01 October 2000)
CS-AWO

4.2 Reversions: None Identified

5. **EASA Special Conditions:**

The following Special Conditions have been applied.

JAA/170/SC/CRI 170/B-12	Angle of Attack Limiting Function
JAA/170/SC/CRI 170/B-15	Electronic Flight Control System: Control Surface Position Awareness
JAA/190/SC/CRI 190/E-16	Engine and APU Intakes Icing
JAA/170/SC/CRI 170/F-14	Air Data System (Smart Probes)
JAA/170/SC/CRI 170/F-16	IRS: Align in Motion
EASA/170/SC/CRI 170/F32	Head Up Guidance System
JAA/170/SC/CRI 170/D-02	Towbarless Towing (Ref: PNPA 25D-275)
JAA/170/SC/CRI 170/C-03	Interaction of Systems and Structure (NPA 25C-199)

JAA/170/SC/CRI 170/C-15	Structural /Control Jam Conditions (JAR 25.671(c) (3)
JAA/170/SC/CRI 170/C-17	Static Strength Criteria for Engine Failure Loads
JAA/170/SC/CRI 170/E-08	Engine Sustained Imbalance
JAA/170/SC/CRI 170/E-10	Uncontrolled Thrust Increase
JAA/170/SC/CRI 190/E-18	Reversing System Requirements
JAA/170/SC/CRI 170/F-01	Protection from the effects of HIRF JAA Interim Policy INT/POL/25/2 Issue 2
JAA/170/SC/CRI 170/F-15	On Board Databases JAR 25.1301, 25.1309, TGL N°9/10, ED-12B/DO-178B, ED-76/DO-200A
EASA/170/SC/CRI 170/D-38	Application of heat release and smoke density requirements to seat materials
EASA/190/SC/CRI 190/D-39	VIP Cabin Interior / Shower installation
EASA/190/SC/CRI 190/H-01	Enhanced Airworthiness Programme for Aeroplane Systems - ICA on EWIS

6. **EASA Deviations:**

No deviations have been granted.

7. **EASA Equivalent Safety Findings:**

The following Equivalent Safety Findings have been granted:

JAA/170/ESF/CRI B-17	Performance information for take-off on contaminated Runways Equivalent Safety with JAR 25x1591and AMJ 25x1591
JAA/170/ESF/CRI C-04	Vibration Buffet and Aeroelastic Stability Equivalent Safety with JAR 25.629 and NPA 25BCD-236
JAA/170/ESF/CRI C-21	Fuel Tank Crashworthiness Equivalent Safety with JAR 25.963(d) and JAR 25.561
JAA/170/ESF/CRI D-05	Hydraulic Systems Equivalent Safety with JAR 25.1435
JAA/170/ESF/CRI D-06	Wheels and Brakes Equivalent Safety with JAR 25.731 and JAR 25.735
JAA/170/ESF/CRI D-07	Fuselage Doors Equivalent Safety with JAR 25.783
JAA/170/ESF/CRI D-17	Type and Number of Passenger Emergency Exits Equivalent Safety with JAR 25.783, 25.785, 25.807, 25.809, 25.811, 25.812, 25.813, and 25.820
JAA/170/ESF/CRI D-18	Packs Off Take Off Equivalent Safety with JAR 25.831(a)
JAA/170/ESF/CRI D-19	Reinforced Security Cockpit Door Equivalent Safety with JAR 25.305(b), 25.307(a), 25.356, 25.771, 25.772, 25.789(a), 25.803, 25.809,25.831, 25.853(a), 25.1301, and 25.1309
JAA/170/ESF/CRI 190/D-23	Thermal Acoustic Linings (ESF) Equivalent Safety with JAR25.853(a)
JAA/170/ESF/CRI 190/D-27	Tyre Speed Rating Equivalent Safety with JAR 25.733
JAA/170ESF/CRI 190/D-28	Seat Mounted Items of Mass/ Cabin Surveillance Systems/Bulkhead Exit Signs Equivalent Safety with JAR 25.562, 25.785, 25.773(a)(2), 25.777(a), 25.811(d)(3), 25.1301, 25.1309

JAA/170/ESF/CRI 190/E-13	Powerplant Installation Safety Assessments Equivalent Safety with JAR 25.901(c), 25.1309 (NPA 25E-337)
JAA/170/ESF/CRI F-12	Equipment, Systems and Installation Requirements Equivalent Safety with JAR NPA 25F-281
JAA/170/ES/CRI F-26	Honewell Primus EPIC Integrated Modular Avionics System (Compliance with requirements for individual circuit protection) Equivalent Safety with JAR 25.1357(e) and JAR 25.1309
JAA/170/ESF/CRI 190/F-32	Position Light Intensities Equivalent Safety with JAR 25.1389(b), 25.1391, 25.1393, and 25.1395
JAA/170/ES/CRI J-05	APU Installation Equivalent Safety with JAR 25 Subpart J
JAA/170/ES/CRI J-06	APU Instrument Markings Equivalent Safety with JAR 25J.1549

8. **EASA Environmental Standards:**

Noise:	ICAO Annex 16, Volume I (Third Edition)
Fuel:	ICAO Annex 16, Volume II (Second Edition)

III. Technical Characteristics and Operational Limitations

1. **Production Basis:** Manufactured under Type certificate

2. **Design Standard:** Defined by Report 190-200TDSD_EASA "Type Design Standard Document" at Revision -

3. **Description:** Low wing jet transport with a conventional tail unit configuration, powered by two high bypass turbofan engines mounted on pylons beneath the wings.

   The structure is conventional, with an aluminum-alloy fuselage, wing, tail-plane and fin; while ailerons, flaps, spoilers, elevator, and rudder are of composite material. The landing gear is retractable tricycle type, and twin wheeled, with carbon main landing gear wheel brakes.

4. **Dimensions:**

Length	38.66 m	(126 ft 10 in)
Span	28.72 m	(94 ft 3 in)
Height	10.57 m	(34 ft 8 in)
Wing Area	92.53 m^2	(996 ft^2)

5. **Engines:** Two General Electric CF34-10E5, CF34-10E5A1, CF34-10E6, CF34-10E6A1 and CF34-10E7 Turbofan Engines (see Note 1)

   Limitations: See EASA Engine TCDS No. IM.E.021 or Airplane Flight Manual

6. **Auxiliary Power Unit:** Hamilton Sundstrand APS2300
   Limitations: Refer to the APU TCDS / TSO

7. **Propellers:** N/A

8. **Fuel:** Refer to applicable approved manuals

9. **Oil:** Refer to applicable approved manuals

10. **Airspeeds:** See Airplane Flight Manual

11. **Maximum Operating Altitude:** 12, 497 m (41,000 ft) pressure altitude

12. **All Weather Capability:** Cat II, CATIIIa Autoland without Rollout, Head-Up Guidance System with LVTO/CATIIIa/Rollout

13. **Maximum Certified Weights:**

Phase	190-200STD		190-200 LR		190-200 IGW	
Taxi and Ramp	107914 lb	48 950 kg	112324 lb	50 950 kg	115631 lb	52 450 kg
Take-off	107562 lb	48 790 kg	111971 lb	50 790 kg	115278 lb	52 290 kg
Landing	99206 lb	45 000 kg	99206 lb	45 000 kg	100970 lb	45 800 kg
Zero Fuel	93695 lb	42 500 kg	93695 lb	42 500 kg	93915 lb	42 600 kg

14. **Centre of Gravity:** See Airplane Flight Manual

15. **Datum:** A perpendicular plane to the fuselage centerline, located at 15 256 mm ahead of the wing stub front spar. This spar is located 414 mm ahead of the wing jack point.

16. **Mean Aerodynamic Chord (MAC):** 3.682 m (12ft. 1 in.)

17. **Levelling Means:** See Weight and Balance manual

18. **Minimum Flight Crew:** Two (Pilot and Co-pilot) for all types of flight

19. **Maximum Passenger Capacity:** 124 Passengers

20. **Exits:**

	Number	Type	Size mm (inches)
1 Main Fwd LH	1	Type I	780 mm (w) x 1840 mm (h)
2 Main Aft LH	1	Type I	670 mm (w) x 1814 mm (h)
3 Overwing Emergency Doors (LH)	1	Type III	530 mm (w) x 1032 mm (h)
4 Overwing Emergency Doors (RH)	1	Type III	530 mm (w) x 1032 mm (h)
5 Service (Fwd, RH)	1	Type I	640 mm (w) x 1380 mm (h)
6 Service (Aft RH)	1	Type 1	670 mm (w) x 1395 mm (h)

Additionally, for crew emergency evacuation purposes, the following exits are available on both sides:

Cockpit side window (2)	Flight Crew Emergency Exit	483 mm x 508 mm

21. **Baggage/Cargo Compartment:**

Location	Class	Volume $m^3(ft^{3)}$
Front Fwd (Underfloor)	C	13.8 m^3 (488 ft^3)
Rear Aft (Underfloor)	C	12.7 m^3 (448 ft^3)

22. **Wheels and Tyres:**

Nose Assy (Qty 2) Tyre/Wheel: 24x7.7 16PR / 24x7.7 R10*
Main Assy (Qty 4) Tyre/Wheel: H41x16.0-20 22PR / H41x16.0 R20*Speed Rating: 225 mph

* The radial tyre is an optional item for ERJ190-200.

IV. Operating and Servicing Instructions

1. **Flight Manual:**

Airplane Flight Manual, Document No. AFM 1913

2. **Mandatory Maintenance Instructions:**

2.1 Aircraft Maintenance Manual (Customised to aircraft configuration)

2.2 Maintenance Review Board Report Ref: MRB 1928, Revision 1 or Subsequent JAA approved revision

2.3 Airworthiness Limitations and Certification Maintenenance Requirements:

MRB Report P/N 1928:
Appendix A Part 1 (Certification Maintenance Requirements)
Appendix A Part 2 (Airworthiness Limitations Inspections)
Appendix A Part 3 (Fuel System Limitation Items - FSL)
Appendix A Part 4 (Life Limits Items – LLI)

2.4 Structural Repair Manual SRM-1929 is applicable.

3. **Service Letters and Service Bulletins:** As published by Embraer and approved by ANAC.

4. **Required Equipment:** Required equipment is listed in Embraer Document Reference 190CCC009: “Embraer ERJ 190 Build Standard for Airplanes to be delivered to European Countries”

V Notes

Note 1 - The CF34-10E5, CF34-10E5A1, CF34-10E6, CF34-10E6A1 and CF34-10E7 engines designation, as presented in the Engine Parts List, must contain the suffix Gxx, which defines the specific engine configuration. For the ERJ 190-100 and ERJ 190-200 models, the following designations are approved for operation: CF34-10E6G03, CF34-10E6A1G03, CF34-10E5G03, CF34-10E5A1G03, CF34-10E6G05, CF34-10E6A1G05, CF34-10E5G05, CF34-10E5A1G05, CF34-10E7G03, CF34-10E7G05, CF34-10E6G07, CF34-10E6A1G07, CF34-10E5G07 and CF34-10E5A1G07, CF34-10E7G07
The engine nameplate may display the model (example: CF34-10E6) and the Gxx suffix (example: G05) in separate fields.
CF34-10E Block 2 engines are identified with the suffix “G07”

Note 2 - The models ERJ 190-200 are often referred to in Embraer marketing literature as “EMBRAER 195”. The ERJ 190-200 IGW is referred to in Embraer marketing literature as “EMBRAER 195 AR”. These names are strictly marketing designations and are not part of the official models designation.

EASA Approval Dates:
17. July 2006:
ERJ 190-200 STD
ERJ 190-200 LR
ERJ 190-200 IGW

Note 3 – The PRIMUS EPIC® Load 4.4 or subsequent approved loads have to be installed

Note 4 –The thermal and acoustic insulation material that meets the flammability certification requirement CS 25.856 (b) has been approved for ERJ190-100 and ERJ190-200 models (except ERJ 190-100 ECJ) according to Design Change Approval (DCA) 0190-025-00147-2008/EASA and it was addressed with "Elect to comply" CRI D-24 "Thermal Acoustic Insulation Material.

Section 4 Change Record (starts with Issue 11)

Iss. 11.0	02 September 2010	- For all the ERJ 190 models it was included Special Condition 170/D-38 "Application of heat release and smoke density requirements to seat materials"; 190/D-39 "VIP Cabin Interior / Shower installation"; and 190/H-01 "Enhanced Airworthiness Programme for Aeroplane Systems - ICA on EWIS". - Updated the Maximum Passenger Capacity to 114 Passengers for ERJ 190-100STD, 190-100 LR and 190-100 IGW, due to approval of DCA 0190-025-00077-2009/EASA. - Included the "Note 5" for ERJ 190-100 ECJ. - Updated the All Weather Capability for ERJ 190-200, including "CATIIIa Autoland without Rollout" due to approval of DCA 0190-022-00014-2008/EASA. - Included the Section 4 "Change Record".

--End of TCDS IM.A.071 --