Civil Aviation Authority
United Kingdom

TYPE-CERTIFICATE DATA SHEET

UK.TC.A.00071

for

EMBRAER ERJ 190

Type Certificate Holder

EMBRAER S.A.

Av. Brigadeiro Faria Lima. 2170
12227-901 São Jose dos Campos - SP
Brazil

Model(s):	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 ERJ 190-300 ERJ 190-400
Issue:	3
Date of issue:	01 August 2023

TABLE OF CONTENTS

Section 1 General (All Models)

I. General

This Type-Certificate Data Sheet (TCDS) is the concise definition of the type-certificated product accepted and or approved by the CAA in the UK for the affected types and models.

This TCDS includes:

1. Details of the type design that affect the TCDS that have been approved or accepted by the CAA in the UK from 01 January 2021.
2. Details of the type design that affected the TCDS and were approved or accepted by EASA before 01 January 2021, and were incorporated into EASA TCDS EASA.IM.A.071 at Issue 21 dated 28 August 2020 and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

II. Marketing Designations

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”. 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”.

The Model ERJ 190-200 XX is often referred to in EMBRAER marketing literature as the “EMBRAER 195 XX”, with the appropriate model (LR, STD, etc.) substituted for the “XX”. The ERJ 190-200 IGW is referred to in Embraer marketing literature as “EMBRAER 195 AR”.

The Model ERJ 190-300 is often referred to in EMBRAER marketing literature as the “EMBRAER 190E2”. The model ERJ 190-400 is often referred to in EMBRAER marketing literature as the “EMBRAER 195E2”.

These names are strictly marketing designations and are not part of the official model designations.

Section 2 EMBRAER ERJ 190-100 VARIANT

I. General

1. Type / Variant / Model

a) Type: EMBRAER ERJ 190
b) Variant or Model: ERJ 190-100 STD
ERJ 190-100 LR
ERJ 190-100 IGW
ERJ 190-100 ECJ
ERJ 190-100 SR

2. Performance Category

A

3. Certifying Authority

Agência Nacional De Aviação Civil - ANAC
Gerência Geral de Certificação de Produtos Aeronáuticos
Rua Dr. Orlando Feirabend Filho, 230 -
Centro Empresarial Aquarius
Torre B Andares 14 a 18,
Parque Residencial Aquarius,
12246-190 - São José dos Campos – SP
Brazil

4. Manufacturer

EMBRAER S.A.
Av. Brigadeiro Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

5. ANAC (Certifying Authority) Certification Application Date

30 May 2001

6. EASA Validation Application Date

30 March 2003

7. UK CAA Type Validation Application Date

Prior to 31 December 2020, application dates for type certification are covered by EASA type certification application date, as per Section 6 above. New applications for UK CAA type validation received after 01 January 2021 will be recorded in this section. At the current issue of this UK CAA TCDS, no new applications for type validation have been received since 01 January 2021.

8. ANAC Type Certification Date

30 August 2005

9. EASA Type Validation Date

30 June 2006 (see note 2)

10. 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 UK CAA).

II. Certification Basis

1. ANAC (Certifying Authority) Type Certificate Data Sheet

ANAC Type Certificate Data Sheet No. EA-2005T13

2. ANAC (Certifying Authority) 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.

3. EASA Airworthiness Requirements

Refer to EASA TCDS EASA.IM.A.071.

4. UK CAA 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(c) of Amendment FAR 25-102.

4.2 Reversions

None Identified

5. 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. 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-33	Firm Handhold

7. 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~~ (Issue 8 dated 19 October 2009): JAR 25x1591 and AMJ 25x1591 superseded by CS-25.1591 and AMC 25.1591 at Amdt 2
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 JAR 25.853(a)
JAA/170/ESF/CRI 190/D-27	Tyre Speed Rating Equivalent Safety with JAR 25.733
JAA/170/ESF/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 and 25.1309
JAA/170/ESF/CRI 190/E-13	Powerplant Installation Safety Assessments Equivalent Safety with JAR 25.901(c) and 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	Honeywell 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
EASA/170/190/ESF/CRI F-47	Lavatory Oxygen System Restoration Equivalent Safety with JAR 25.1441(c) and 25.1443(c)
EASA/170/190/ESF/CRI F-50	New LED Position Lights System Overlap Exceedance Equivalent Safety with JAR 25.1389(b)(3) 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. Environmental Protection Standards

Noise:	ICAO Annex 16, Volume I (see TCDSN UK.TC.00071 for details)
Prevention of intentional fuel venting:	ICAO Annex 16, Volume II, Part II, Chapter 2

9. Operational Suitability Data Requirements

The UK CAA type certification basis with respect to Operational Suitability Data (OSD) is defined as follows:

MMEL: As per CRI A-MMEL, the applicable certification basis for the establishment of Operational Suitability Data (OSD) MMEL is:
JAR MMEL/MEL Amendment 1, Section 1 with CS-MMEL Book 2 Initial issue as AMC/GM.

FCD: As per CRI A-FCD, the applicable certification basis for the establishment of Operational Suitability Data (OSD) Flight Crew is:
CS-FCD, Initial Issue, dated 31 January 2014.

CCD: As per CRI A-CCD, the applicable certification basis for the establishment of Operational Suitability Data (OSD) Cabin Crew is:
CS-CCD, Initial Issue, dated 31 January 2014.

III. Technical Characteristic and Operating Limitations

1. Production Basis

Manufactured under Production Certificate (ANAC COP E-7203-1)

2. Type Design Definition

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.

For the ERJ 190-100 ECJ also see Note 5.

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 aluminium-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. Equipment

Required equipment is listed in Embraer Document Reference 190CCC009: “EMBRAER ERJ 190 Build Standard for Airplanes to be delivered to European Countries”. Also, see Note 3.

5. 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)

6. 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 Engine Type Data Sheet No. EASA.IM.E.021 or Airplane Flight Manual

7. Auxiliary Power Unit

Pratt & Whitney Rzeszów S.A. APS2300

Limitations: Refer to the APU ETSO and DDP referenced therein

8. Propellers

Not applicable.

9. Fluids (Fuel, Oil, Additives, Hydraulics)

Refer to applicable approved manuals

10. Fluid Capacities

Refer to applicable approved manuals

11. Airspeed Limits

See Airplane Flight Manual

12. Maximum Operating Altitude

12,497 m (41,000 ft) pressure altitude

13. All Weather Capability

Cat II, CAT IIIa Autoland without Rollout, Head-Up Guidance System with LVTO/CAT IIIa/Rollout

14. Maximum Certified Masses

Phase	190-100STD		190-100 LR	
Taxi and Ramp	105,706 lb	47,950 kg	111,239 lb	50,460 kg
Take-off	105,353 lb 96,624 lb (2) 101,412 lb (6) 99,207 lb (6) 98,325 lb (6) 97,002 lb (6)	47,790 kg 43,740 kg (2) 46,000 kg (6) 45,000 kg (6) 44,600 kg (6) 44,000 kg (6)	110,892 lb 105,359 lb (1) 110,209 lb (3) 98,988 lb (4) 101,412 lb (6) 99,207 lb (6) 98,325 lb (6) 97,002 lb (6)	50,300 kg 47,790 kg (1) 49,990 kg (3) 44,900 kg (4) 46,000 kg (6) 45,000 kg (6) 44,600 kg (6) 44,000 kg (6)
Landing	105,816 lb	43,000 kg	94,794 lb	43,000 kg
Zero Fuel	89,944 lb	40,800 kg	89,944 lb	40,800 kg

Phase	190-100 IGW		190-100 ECJ	
Taxi and Ramp	114,546 lb	51,960 kg	120,591 lb	54,700 kg
Take-off	114,199 lb 105,359 lb (5)	51,800 kg 47,790 kg (5)	120,150 lb 100,000 lb (7) 95,000 lb (7) 90,000 lb (7)	54,500 kg 45,360 kg (7) 43,092 kg (7) 40,824 kg (7)
Landing	96,998 lb	44000 kg	100970 lb	45800 kg
Zero Fuel	90,164 lb	40900 kg	80467 lb	36500 kg

Phase	190-100 SR	
Taxi and Ramp	101,743 lb 110,561 lb (8) 111,245 lb (9)	46,150 kg 50,150 kg (8) 50,460 kg (9)
Take-off	101,390 lb 110,209 lb (8) 110,892 lb (9)	45,990 kg 49,990 kg (8) 50,300 kg (9)
Landing	105,816 lb	43,000 kg
Zero Fuel	89,944 lb	40,800 kg

(1) For airplanes Post-Mod. SB 190-00-0012 or equipped with an equivalent modification factory incorporated.
(2) For airplanes Post-Mod. SB 190-00-0024 or equipped with an equivalent modification factory incorporated.
(3) For airplanes Post-Mod. SB 190-00-0030 or equipped with an equivalent modification factory incorporated.
(4) For airplanes Post-Mod. SB 190-00-0032 or equipped with an equivalent modification factory incorporated.
(5) For airplanes Post-Mod. SB 190-00-0034 or equipped with an equivalent modification factory incorporated.
(6) For airplanes Post-Mod. SBs 190-00-0050 to 190-00-0065 or equipped with an equivalent modification factory incorporated.
(7) For airplanes Post-Mod. SBs 190LIN-00-0016 to 190LIN-00-0018 or equipped with an equivalent modification factory incorporated.
(8) For airplanes Post-Mod. SBs 190-00-0089 or equipped with an equivalent modification factory incorporated.
(9) For airplanes Post-Mod. SBs 190-00-0087 or equipped with an equivalent modification factory incorporated.

15. Centre of Gravity Range

See Airplane Flight Manual.

16. Datum

A perpendicular plane to the fuselage centre line, located at 14,443 mm ahead of the wing stub front spar. This spar is located 414 mm ahead of the wing jack point.

17. Mean Aerodynamic Chord (MAC)

3.682 m (12ft. 1 in.)

18. Levelling Means

See Weight and Balance Manual.

19. Minimum Flight Crew

Two (Pilot and Co-pilot) for all types of flight.

20. Maximum Seating Capacity

114 Passengers except the following:

The ERJ 190-100 ECJ is limited to 19 Passengers (see Note 4)

The ERJ 190-100 SR is limited to 98 Passengers

21. Exits

All ERJ 190-100 Models except ERJ 190-100 ECJ (Lineage 1000):

Exit	Number	Type	Size mm
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 I	670 mm (w) x 1395 mm (h)
7 Cockpit Side Window (2)	Flight Crew Emergency Exits		483 mm (w) x 508 mm (h)

The ERJ 190-100 ECJ (Lineage 1000) has the following exits available:

Exit	Number	Type	Size mm
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)
3 Cockpit Side Window (2)	Flight Crew Emergency Exits		483 mm (w) x 508 mm (h)

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

22. Baggage/ Cargo Compartment

All ERJ 190-100 Models except ERJ 190-100 ECJ (Lineage 1000):

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)

The ERJ 190-100 ECJ (Lineage 1000) – subject to cabin completion, see Note 4:

Location	Class	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)

23. Wheels and Tyres

Nose Assy (Qty 2) Tyre/Wheel: 24 x 7.7 16PR / 24 x 7.7 R10*

Main Assy (Qty 4) Tyre/Wheel: H41 x 16.0-20 22PR / H41 x 16.0 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 Service 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

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

The National Requirements identified in Appendix E of the MRBR as applicable to aircraft operating under EASA jurisdiction are applicable to aircraft operating under UK CAA jurisdiction.

2.3 Airworthiness Limitations and Certification Maintenance Requirements

MRB Report (MRB-1928): Appendix A Part 1 (Certification Maintenance Requirements)

Appendix A Part 2 (Structural Inspection Fatigue Limits ALI)

Appendix A Part 3 (Fuel System Limitation Items - FSL)

Appendix A Part 4 (Life Limit 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 considered 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 applies.

3. Service Letters and Service Bulletins

As published by EMBRAER and approved by ANAC.

V. Operational Suitability Data

1. Master Minimum Equipment List

MMEL revisions up to 31 December 2020 were approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and were accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement. MMEL-5814 Rev 7 was in force as of 31 December 2020.

Following EU-exit, the updated Operational Suitability Data with a specific UK reference listed below is approved by the UK CAA under UK.MAJ.00230 acting in accordance with Regulation (EU) 2018/1139 and Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018.

a. The Master Minimum Equipment List has been approved as per the defined Operational Suitability Data Certification Basis recorded in CRI A-MMEL and as documented in EMBRAER 170/175/190/195 UK CAA Master Minimum Equipment List MMEL-8350, Original Revision, dated 24 July 2023.

b. Required for entry into service by UK operator.

2. Flight Crew Data

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

a. The Flight Crew data has been approved as per the defined Operational Suitability Data Certification Basis recorded in CRI A-FCD and as documented in EASA Operational Suitability Data (OSD) Flight Crew - ERJ 170/190 Report 170MSO092, Orig. Revision, dated 04 December 2015, or later EASA approved revisions prior to 01 January 2021, or UK CAA approved revisions from 01 January 2021.

b. Required for entry into service by UK operator.

c. Pilot Type Rating: The licence endorsement for the ERJ 190-100 models aircraft is "EMB170". The ERJ 190 and the ERJ 170 series aircraft are variants of the same type of aircraft.

3. Cabin Crew Data

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

a. The Cabin Crew data has been approved as per the defined Operational Suitability Data Certification Basis recorded in CRI A-CCD and as documented in EMBRAER 170/175/190/195 Operational Suitability Data Report, Cabin Crew Qualifications Revision 2, dated 12 June 2014, or later EASA approved revisions prior to 01 January 2021, or UK CAA approved revisions from 01 January 2021.

b. Required for entry into service by UK operator.

c. The EMBRAER 190/195 aircraft models are determined to be variants to the EMBRAER 170/175 aircraft models.

VI. 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:

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 must be installed. For the ERJ 190-100 ECJ the PRIMUS EPIC® Load 21.4 or subsequent approved loads must 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 jurisdiction:

(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 i.a.w CRI 190/D-31 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. Type / Variant / Model

a) Type: EMBRAER ERJ 190
b) Variant or Model: ERJ 190-200 STD
ERJ 190-200 LR
ERJ 190-200 IGW

2. Performance Category

A

3. Certifying Authority

Agência Nacional De Aviação Civil - ANAC
Gerência Geral de Certificação de Produtos Aeronáuticos
Rua Dr. Orlando Feirabend Filho, 230 -
Centro Empresarial Aquarius
Torre B Andares 14 a 18,
Parque Residencial Aquarius,
12246-190 - São José dos Campos – SP
Brazil

4. Manufacturer

EMBRAER S.A.
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

5. ANAC Certification Application Date

31 December 2001

6. EASA Validation Application Date

30 March 2003

7. UK CAA Type Validation Application Date

UK CAA Type Validation Application Date Prior to 31 December 2020, application dates for type certification are covered by the JAA type certification application date, as per Section 6 above. New applications for UK CAA type validation received after 01 January 2021 will be recorded in this section. At the current issue of this UK CAA TCDS, no new applications for type validation have been received since 01 January 2021.

8. ANAC Type Certification Date

30 June 2006

9. EASA Type Validation Date

17 July 2006 (see note 2)

II. Certification Basis

1. ANAC (Certifying Authority) Type Certificate Data Sheet

ANAC Type Certificate Data Sheet No. EA-2005T13

2. ANAC (Certifying Authority) Certification Basis

RBHA 25 - Requisitos de Aeronavegabilidade. AvioesdeTransporte (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)

3. EASA Airworthiness Requirements

Refer to EASA TCDS EASA.IM.A.071.

4. CAA 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. 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/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. Deviations

No deviations have been granted.

7. 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~~ (Issue 8 dated 19 October 2009): JAR 25x1591 and AMJ 25x1591 superseded by CS-25.1591 and AMC 25.1591 at Amdt 2
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 JAR 25.853(a)
JAA/170/ESF/CRI 190/D-27	Tyre Speed Rating Equivalent Safety with JAR 25.733
JAA/170/ESF/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 and 25.1309
JAA/170/ESF/CRI 190/E-13	Powerplant Installation Safety Assessments Equivalent Safety with JAR 25.901(c) and 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	Honeywell 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
EASA/170/190/ESF/CRI F-47	Lavatory Oxygen System Restoration Equivalent Safety with JAR 25.1441(c) and 25.1443(c)
EASA/170/190/ESF/CRI F-50	New LED Position Lights System Overlap Exceedance Equivalent Safety with JAR 25.1389(b)(3) 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. Environmental Protection Standards

Noise: ICAO Annex 16, Volume I (see TCDSN UK.TC.A.00071)

Prevention of intentional fuel venting: ICAO Annex 16, Volume II, Part II, Chapter 2

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

9. Operational Suitability Data Requirements

The UK CAA type certification basis with respect to Operational Suitability Data (OSD) is defined as follows:

MMEL: As per CRI A-MMEL, the applicable certification basis for the establishment of Operational Suitability Data (OSD) MMEL is:
JAR MMEL/MEL Amendment 1, Section 1 with CS-MMEL Book 2 Initial issue as AMC/GM.

FCD: As per CRI A-FCD, the applicable certification basis for the establishment of Operational Suitability Data (OSD) Flight Crew is:
CS-FCD, Initial Issue, dated 31 January 2014.

CCD: As per CRI A-CCD, the applicable certification basis for the establishment of Operational Suitability Data (OSD) Cabin Crew is:
CS-CCD, Initial Issue, dated 31 January 2014.

III. Technical Characteristic and Operating Limitations

1. Production Basis

Manufactured under Production Certificate (ANAC COP E-7203-1)

2. Type Design Definition

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 aluminium-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. Equipment

Required equipment is listed in Embraer Document Reference 190CCC009: “EMBRAER ERJ 190 Build Standard for Airplanes to be delivered to European Countries”. Also, see Note 3.

5. 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)

6. Engines

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

Limitations: See Engine Type Data Sheet No. EASA.IM.E.021 or Airplane Flight Manual

7. Auxiliary Power Unit

Pratt & Whitney Rzeszów S.A. APS2300

Limitations: Refer to the APU ETSO and DDP referenced therein

8. Propellers

Not applicable.

9. Fluids (Fuel, Oil, Additives, Hydraulics)

Refer to applicable approved manuals

10. Fluid Capacities

Refer to applicable approved manuals

11. Airspeed Limits:

See Airplane Flight Manual

12. Maximum Operating Altitude

12,497 m (41,000 ft) pressure altitude

13. All Weather Capability

Cat II, CAT IIIa Autoland without Rollout, Head-Up Guidance System with LVTO/CAT IIIa/Rollout

14. Maximum Certified Masses

Phase	190-200STD		190-200 LR	
Taxi and Ramp	107,914 lb	48,950 kg	112,324 lb	50,950 kg
Take-off	107,562 lb 101,411 lb (1)	48,790 kg 46,000 kg (1)	111,971 lb 107,562 lb (2)	50,790 kg 48,790 kg (2)
Landing	99,206 lb	45,000 kg	99,206 lb	45,000 kg
Zero Fuel	93,695 lb	42,500 kg	93,695 lb	42,500 kg

Phase	190-200 IGW	
Taxi and Ramp	115,631 lb	52,450 kg
Take-off	115,278 lb	52,290 kg
Landing	100,970 lb	45,800 kg
Zero Fuel	93,915 lb	42,600 kg

(1) If SB 190-00-0038 applied
(2) For airplanes Post-Mod. SB 190-00-0076 or equipped with an equivalent modification factory incorporated.

15. Centre of Gravity Range

See Airplane Flight Manual.

16. Datum

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

17. Mean Aerodynamic Chord (MAC)

3.682 m (12ft. 1 in.)

18. Levelling Means

See Weight and Balance Manual.

19. Minimum Flight Crew

Two (Pilot and Co-pilot) for all types of flight.

20. Maximum Seating Capacity

124 Passengers

21. Exits

All ERJ 190-200 Models:

Exit	Number	Type	Size mm
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 I	670 mm (w) x 1395 mm (h)
7 Cockpit Side Window (2)	Flight Crew Emergency Exits		483 mm (w) x 508 mm (h)

22. Baggage/ Cargo Compartment

All ERJ 190-200 Models:

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)

23. Wheels and Tyres

Nose Assy (Qty 2) Tyre/Wheel: 24 x 7.7 16PR / 24 x 7.7 R10*

Main Assy (Qty 4) Tyre/Wheel: H41 x 16.0-20 22PR / H41 x 16.0 R20* Speed Rating: 225 mph

* The radial tyre is an optional item for the ERJ 190-200

IV. Operating and Service 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

Maintenance Review Board Report Ref: MRB-1928, Revision 1 or subsequent approved revision.

The National Requirements identified in Appendix E of the MRBR as applicable to aircraft operating under EASA jurisdiction are applicable to aircraft operating under UK CAA jurisdiction.

2.3 Airworthiness Limitations and Certification Maintenance Requirements

MRB Report (MRB-1928):	Appendix A Part 1 (Certification Maintenance Requirements)
	Appendix A Part 2 (Structural Inspection Fatigue Limits ALI)
	Appendix A Part 3 (Fuel System Limitation Items - FSL)
	Appendix A Part 4 (Life Limit Items – LLI)

2.4 Structural Repair Manual

SRM-2411 is applicable.

3. Service Letters and Service Bulletins

As published by EMBRAER and approved by ANAC.

V. Operational Suitability Data

1. Master Minimum Equipment List

MMEL revisions up to 31 December 2020 were approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and were accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement. MMEL-5814 Rev 7 was in force as of 31 December 2020.

Following EU-exit, the updated Operational Suitability Data with a specific UK reference listed below is approved by the UK CAA under UK.MAJ.00230 acting in accordance with Regulation (EU) 2018/1139 and Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018.

a. The Master Minimum Equipment List has been approved as per the defined Operational Suitability Data Certification Basis recorded in CRI A-MMEL and as documented in EMBRAER 170/175/190/195 UK CAA Master Minimum Equipment List MMEL-8350, Original Revision, dated 24 July 2023.

b. Required for entry into service by UK operator.

2. Flight Crew Data

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

a. The Flight Crew data has been approved as per the defined Operational Suitability Data Certification Basis recorded in CRI A-FCD and as documented in EASA Operational Suitability Data (OSD) Flight Crew - ERJ 170/190 Report 170MSO092, Orig. Revision, dated 04 December 2015 or later EASA approved revisions prior to 01 January 2021, or UK CAA approved revisions from 01 January 2021.

b. Required for entry into service by UK operator.

c. Pilot Type Rating: The licence endorsement for the ERJ 190-200 models aircraft is "EMB170". The ERJ 190 and the ERJ 170 series aircraft are variants of the same type of aircraft.

3. Cabin Crew Data

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

a. The Cabin Crew data has been approved as per the defined Operational Suitability Data Certification Basis recorded in CRI A-CCD and as documented in EMBRAER 170/175/190/195 Operational Suitability Data Report, Cabin Crew Qualifications Revision 2, dated 12 June 2014, or later EASA approved revisions prior to 01 January 2021, or UK CAA approved revisions from 01 January 2021.

b. Required for entry into service by UK operator.

c. The EMBRAER 190/195 aircraft models are determined to be variants to the EMBRAER 170/175 aircraft models.

VI. 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:

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 must 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 EMBRAER ERJ 190-300 VARIANT

I. General

1. Type / Variant / Model

c) Type: EMBRAER ERJ 190
d) Variant or Model: ERJ 190-300

2. Performance Category

A

3. Certifying Authority

Agência Nacional De Aviação Civil - ANAC
Gerência Geral de Certificação de Produtos Aeronáuticos
Rua Dr. Orlando Feirabend Filho, 230 -
Centro Empresarial Aquarius
Torre B Andares 14 a 18,
Parque Residencial Aquarius,
12.246-190 - São José dos Campos – SP
Brazil

4. Manufacturer

EMBRAER S.A.
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

5. ANAC Certification Application Date

29 July 2013

6. EASA Validation Application Date

30 July 2013

7. UK CAA Type Validation Application Date

UK CAA Type Validation Application Date Prior to 31 December 2020, application dates for type certification are covered by the JAA type certification application date, as per Section 6 above. New applications for UK CAA type validation received after 01 January 2021 will be recorded in this section. At the current issue of this UK CAA TCDS, no new applications for type validation have been received since 01 January 2021.

8. ANAC Type Certification Date

28 February 2018

9. EASA Type Validation Date

28 February 2018

II. Certification Basis

1. ANAC (Certifying Authority) Type Certificate Data Sheet

ANAC Type Certificate Data Sheet No. EA-2005T13

2. ANAC (Certifying Authority) Certification Basis

RBAC 25 (Airworthiness Standards: Transport Category Airplanes), effective on June 12, 2013, corresponding to the 14 CFR Part 25, including amendments 25-1 through 25-134, plus the following amendments:

- Amendment 25-135 in entirety
- Amendment 25-136 in entirety

Besides the RBAC 25 amendments listed above, for the sake of harmonization between the ANAC and FAA certification basis, Embraer proposes to adopt as reference the following additional requirements:

US 14 CFR Part 25 (Airworthiness Standards: Transport Category Airplanes), including the following amendments:

- Amendment 25-137 in entirety GCF- 1608/2017 Annex – 4/8
- Amendment 25-138 in entirety
- Amendment 25-139 in entirety
- Amendment 25-141 in entirety

No reversion to earlier amendments of Part 25, as prescribed under § 21.101(b)(3), was identified for this project.

3. EASA Airworthiness Requirements

Refer to EASA TCDS EASA.IM.A.071.

4. CAA Airworthiness Requirements

4.1. Applicable CS Requirements at the Reference Date

CS-25 Amdt. 13 (dated 10 June 2013)

CS 25.851(a)(6) at Amdt. 18 with regards to the equipment installation and qualification of Halon free hand-held Fire Extinguishers

CS-AWO Initial Issue (dated 17 October 2003)

4.2 Reversions

None Identified

5. Special Conditions

The following Special Conditions have been applied.

E2/B-25	Flight Envelope protection: General Requirements
E2/B-28	Flight Envelope protection: High AoA Protection
E2/B-29	Performance Credit for ATTCS During Go-Around
E2/C-26	Landing Pitchover Condition
E2/D-46	Electronic Flight Control System: Control Surface Position Awareness, Multiple Modes of Operation, Flight Control in all Attitudes
E2/D-49	Seats with Non-Traditional, Large, Non-Metallic Panels
E2/D-53	Electrical/Electronic Equipment Bay Fire Detection and Smoke Penetration
E2/E-20	Water / Ice in fuel
E2/E-21	Cowl loss prevention
JAA/170/SC/CRI 170/F-01	Protection from the effects of HIRF JAA Interim Policy INT/POL/25/2 Iss 2
170,190/F-40B	ERJ 170/190 DataLink Services
170/F-41	Flight Recorders including Data Link Recording

E2/F-58	Security Protection of Aircraft Systems & Networks
E2/F-65	Non-rechargeable Lithium-Ion Batteries

6. Deviations

No deviations have been granted.

7. Equivalent Safety Findings

The following Equivalent Safety Findings have been granted:

E2/B-24	Electronic Flight Control System: Mis-trim Manoeuvring
E2/C-38	Vibration/Buffeting Criteria for Ku Band Antenna Radome Installation (CS25.251)
E2/D-44	Flight Control System Failure Criteria
E2/D-47	Tyre Speed Rating
E2/D-48	Emergency Exit Locator Sign
E2/D-51	Protection of Flight Crew Compartment - Reduced Energy
E2/D-69	Aerodynamic Seals and Flap track fairings compliance to CS 25.867
E2/D-72	Minor Obstruction to Type III Exit
E2/D-73	Combined Aircraft Pressurization Outflow and Positive Pressure Differential Relief Valves
E2/E-22	PW1900G Nacelle designated fire zones
E2/E-34	Lack of On/Off Switch for Automatic Takeoff Thrust Control System (ATTCS)
E2/F-47	Lavatory Oxygen System Restoration
E2/F-64	Pneumatic Systems Harmonized 25.1438
E2/F-68	Crew Determination of Quantity of Oxygen in Lavatory and Cabin Oxygen System distributed Bottles
E2/F-70	Determination of Minimum Oxygen Flow for the Passenger Oxygen System
E2/F-72	Position Lighting Systems Maximum Overlapping Intensity Deviations
E2/G-05	Digital only Display for Powerplant System Indications

8. Environmental Protection Standards

Noise:	CS-36 Amdt. 5 (dated 1 August 2019) (see TCDSN UK.TC.A.00071)
Prevention of intentional fuel venting:	CS-34 Amdt. 1 (dated 28 January 2013)

9. Operational Suitability Data Requirements

The UK CAA type certification basis with respect to Operational Suitability Data (OSD) is defined as follows:

MMEL: As per CRI A-MMEL, the applicable certification basis for the establishment of Operational Suitability Data (OSD) MMEL is:
JAR MMEL/MEL Amendment 1, Section 1 with CS-MMEL Book 2 Initial issue as AMC/GM.

FCD: The applicable certification basis for the establishment of Operational Suitability Data (OSD) Flight Crew is:
CS-FCD, Initial Issue, dated 31 January 2014.

CCD: As per CRI A-CCD, the applicable certification basis for the establishment of Operational Suitability Data (OSD) Cabin Crew is:
CS-CCD, Initial Issue, dated 31 January 2014.

III. Technical Characteristic and Operating Limitations

1. Production Basis

Manufactured under Production Certificate (ANAC COP E-7203-1)

2. Type Design Definition

Defined by Report 196TDSD300 “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 aluminium-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. Equipment

Required equipment is listed in Embraer Document Reference 196TDD300: “Type Design Standard Document”.

5. Dimensions

Length	36.237 m (118 ft 10 in)
Span	33.72 m (110 ft 4 in)
Height	10.69 m (35 ft 1 in)
Wing Area	103 m^2 (1108.7 ft^2)

6. Engines

Two Pratt & Whitney PW1919G or two Pratt & Whitney PW1922G Turbofan Engines

Limitations: See Engine Type Data Sheet No. IM.E.090 Issue 7 dated 12 December 2019 or Airplane Flight Manual

7. Auxiliary Power Unit

Pratt & Whitney Rzesów APS2600[E]

Limitations: Refer to the APU ETSO and DDP referenced therein

8. Propellers

Not applicable.

9. Fluids (Fuel, Oil, Additives, Hydraulics)

Refer to applicable approved manuals

10. Fluid Capacities

Refer to applicable approved manuals

11. Airspeed Limits:

See Airplane Flight Manual

12. Maximum Operating Altitude

12,497 m (41,000 ft) pressure altitude

13. All Weather Capability

Cat II, CAT III Fail-Passive Autoland without Rollout Guidance

14. Maximum Certified Masses

190-300 Phase							
Taxi and Ramp		Take-off		Landing		Zero Fuel	
110,650 lb[28]	50,190 kg [14]	110,209 lb[28]	49,990 kg [14]	108,136 lb	49,050 kg	102,955 lb	46700 kg
111,774 lb[15]	50,700 kg [1]	111,333 lb[15]	50,500 kg [1]				
112,876 lb[16]	51,200 kg [2]	112,435 lb[16]	51,000 kg [2]				
113,978 lb[17]	51,700 kg [3]	113,538 lb[17]	51,500 kg [3]				
115,081 lb[18]	52,200 kg [4]	114,640 lb[18]	52,000 kg [4]				
116,183 lb[19]	52,700 kg [5]	115,742 lb[19]	52,500 kg [5]				
117,285 lb[20]	53,200 kg [6]	116,844 lb[20]	53,000 kg [6]				
118,388 lb[21]	53,700 kg [7]	117,947 lb[21]	53,500 kg [7]				
119,490 lb[22]	54,200 kg [8]	119,049 lb[22]	54,000 kg [8]				
120,592 lb[23]	54,700 kg [9]	120,151 lb[23	54,500 kg [9]				
121,695 lb[24]	55,200 kg [10]	121,254 lb[24]	55,000 kg [10]				
122,797 lb[25]	55,700 kg [11]	122,356 lb[25]	55,500 kg [11]				
123,899 lb[26]	56,200 kg [12]	123,458 lb[26]	56,000 kg [12]				
124,781 lb[27]	56,600 kg [13]	124,340 lb[27]	56,400 kg [13]				

(x) For airplanes Post-Mod. or equipped with an equivalent modification factory incorporated.

[1]SB 190E2-00-0001 (MTOW 50,500 kg)
[2]SB 190E2-00-0002 (MTOW 51,000 kg)
[3]SB 190E2-00-0003 (MTOW 51,500 kg)
[4]SB 190E2-00-0004 (MTOW 52,000 kg)
[5]SB 190E2-00-0005 (MTOW 52,500 kg)
[6]SB 190E2-00-0006 (MTOW 53,000 kg)
[7]SB 190E2-00-0007 (MTOW 53,500 kg)
[8]SB 190E2-00-0008 (MTOW 54,000 kg)
[9]SB 190E2-00-0009 (MTOW 54,500 kg)
[10]SB 190E2-00-0010 (MTOW 55,000 kg)
[11]SB 190E2-00-0011 (MTOW 55,500 kg)
[12]SB 190E2-00-0012 (MTOW 56,000 kg)
[13]SB 190E2-00-0013 (MTOW 56,400 kg)
[14]SB 190E2-00-0014 (MTOW 49,990 kg)
[15]SB 190E2-00-0015 (MTOW 111,333 lb)
[16]SB 190E2-00-0016 (MTOW 112,435 lb)
[17]SB 190E2-00-0017 (MTOW 113,538 lb)
[18]SB 190E2-00-0018 (MTOW 114,640 lb)
[19]SB 190E2-00-0019 (MTOW 115,742 lb)
[20]SB 190E2-00-0020 (MTOW 116,844 lb)
[21]SB 190E2-00-0021 (MTOW 117,947 lb)
[22]SB 190E2-00-0022 (MTOW 119,049 lb)
[23]SB 190E2-00-0023 (MTOW 120,151 lb)
[24]SB 190E2-00-0024 (MTOW 121,254 lb)
[25]SB 190E2-00-0025 (MTOW 122,356 lb)
[26]SB 190E2-00-0026 (MTOW 123,458 lb)
[27]SB 190E2-00-0027 (MTOW 124,340 lb)
[28]SB 190E2-00-0028 (MTOW 110,209 lb)

15. Centre of Gravity Range

See Airplane Flight Manual

16. Datum

A perpendicular plane to the fuselage centre line, located at 13,571 mm ahead of the wing stub front spar.

17. Mean Aerodynamic Chord (MAC)

3.665 m (12ft. 0 in.)

18. Levelling Means

See Weight and Balance Manual

19. Minimum Flight Crew

Two (Pilot and Co-pilot) for all types of flight

20. Maximum Seating Capacity

The table below provides the certified Maximum Passenger Seating Capacities (MPSC), the corresponding cabin configuration (exit arrangement) and the associated minimum numbers of cabin crew members used to demonstrate compliance with the certification requirement:

Passenger Seating Capacity & Cabin Configuration	Cabin crew
114 (I-III-I)	3

21. Exits

Exit	Number	Type	Size mm
1 Main Fwd LH	1	Type I	750 mm (w) x 1820.9 mm (h)
2 Main Aft LH	1	Type I	635 mm (w) x 1706.1 mm (h)
3 Overwing Emergency Doors (LH)	1	Type III	601.6 mm (w) x 1032.8 mm (h)
4 Overwing Emergency Doors (RH)	1	Type III	601.6 mm (w) x 1032.8 mm (h)
5 Service (Fwd, RH)	1	Type I	611 mm (w) x 1351.6 mm (h)
6 Service (Aft RH)	1	Type I	632 mm (w) x 1373.9 mm (h)
7 Cockpit Side Window (2)	Flight Crew Emergency Exits		483 mm (w) x 508 mm (h)

22. Baggage/ Cargo Compartment

Location	Class	Volume m^3 (ft^3)
Front Fwd (Underfloor)	C	10.09 m^3 (356.3 ft^3)
Rear Aft (Underfloor)	C	11.45 m^3 (404.4 ft^3)

23. Wheels and Tyres

Nose Assy (Qty 2) Tyre/Wheel: 27 x 8.5R12 16PR / 27 x 8.5-R12*

Main Assy (Qty 4) Tyre/Wheel: H42 x 16.0R20 24PR / H42 x 16.0-R20* Speed Rating: 225 mph

* The radial tyre is a standard item for ERJ190-300.

IV. Operating and Service Instructions

1. Flight Manual

Airplane Flight Manual, Document No. AFM 5693-001

2. Mandatory Maintenance Instructions

2.1 Aircraft Maintenance Manual

(Customised to aircraft configuration)

2.2 Maintenance Review Board Report

Maintenance Review Board Report Ref: MRB-5881, Revision 0 or subsequent approved revision.

The National Requirements identified in Appendix E of the MRBR as applicable to aircraft operating under EASA jurisdiction are applicable to aircraft operating under UK CAA jurisdiction.

2.3 Airworthiness Limitations and Certification Maintenance Requirements

MRB Report (MRB-5881): Appendix A Part 1 (Certification Maintenance Requirements)

Appendix A Part 2 (Structural Inspection Fatigue Limits ALI)

Appendix A Part 3 (Fuel System Limitation Items - FSL)

Appendix A Part 4 (Life Limit Items – LLI)

2.4 Structural Repair Manual

SRM-6736 is applicable.

3. Service Letters and Service Bulletins

As published by EMBRAER and approved by ANAC.

V. Operational Suitability Data

1. Master Minimum Equipment List

MMEL revisions up to 31 December 2020 were approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and were accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement. MMEL-5814 Rev 7 was in force as of 31 December 2020.

Following EU-exit, the updated Operational Suitability Data with a specific UK reference listed below is approved by the UK CAA under UK.MAJ.00230 acting in accordance with Regulation (EU) 2018/1139 and Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018.

a. The Master Minimum Equipment List has been approved as per the defined Operational Suitability Data Certification Basis recorded in CRI A-MMEL and as documented in EMBRAER 170/175/190/195 UK CAA Master Minimum Equipment List MMEL-8350, Original Revision, dated 24 July 2023.

b. Required for entry into service by UK operator.

2. Flight Crew Data

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

a. The Flight Crew data has been approved as per the defined Operational Suitability Data Certification Basis recorded in CRI A-FCD and as documented in EASA Operational Suitability Data (OSD) Flight Crew - ERJ 170/190 Report 170MSO092, Revision B, dated 26 January 2018, or later EASA approved revisions prior to 01 January 2021, or UK CAA approved revisions from 01 January 2021.

b. Required for entry into service by UK operator.

c. Pilot Type Rating: The licence endorsement for the ERJ 190-300 models aircraft is "EMB170". The ERJ 190 and the ERJ 170 series aircraft are variants of the same type of aircraft.

3. Cabin Crew Data

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

a. The Cabin Crew Data has been approved as per the defined Operational Suitability Data Certification Basis: CS-CCD, Initial Issue, and as documented in the “Embraer Report No: 196MSO1007, Initial Issue, dated 15 December 2017- Operational Suitability Data Cabin Crew, Program: ERJ 170/ ERJ 175/ ERJ 190/ ERJ 195/ ERJ 190E2”, or later EASA approved revisions prior to 01 January 2021, or UK CAA approved revisions from 01 January 2021.

b. Required for entry into service by UK operator.

c. For cabin crew, the ERJ 190-300 aircraft model is determined to be a variant to the ERJ 190-100 model. For cabin crew, the ERJ 190-300 aircraft model is determined to be a variant to the ERJ 190/195 and ERJ 170/175 models.

VI. Notes

Reserved.

Section 5 EMBRAER ERJ 190-400 VARIANT

I. General

1. Type / Variant / Model

a) Type: EMBRAER ERJ 190
b) Variant or Model: ERJ 190-400

2. Performance Category

A

3. Certifying Authority

Agência Nacional De Aviação Civil - ANAC
Gerência Geral de Certificação de Produtos Aeronáuticos
Rua Dr. Orlando Feirabend Filho, 230 -
Centro Empresarial Aquarius
Torre B Andares 14 a 18,
Parque Residencial Aquarius,
12.246-190 - São José dos Campos – SP
Brazil

4. Manufacturer

EMBRAER S.A.
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

5. ANAC Certification Application Date

30 April 2015

6. EASA Validation Application Date

20 July 2014

7. ANAC Type Certification Date

15 April 2019

8. EASA Type Validation Date

15 April 2019

II. Certification Basis

1. ANAC (Certifying Authority) Type Certificate Data Sheet

ANAC Type Certificate Data Sheet No. EA-2005T13

2. ANAC (Certifying Authority) Certification Basis

RBAC 25 (Airworthiness Standards: Transport Category Airplanes), effective on June 12, 2013, corresponding to the 14 CFR Part 25, including amendments 25-1 through 25-134, plus the following amendments:

- Amendment 25-135 in entirety
- Amendment 25-136 in entirety

Besides the RBAC 25 amendments listed above, for the sake of harmonization between the ANAC and FAA certification basis, Embraer proposes to adopt as reference the following additional requirements:

US 14 CFR Part 25 (Airworthiness Standards: Transport Category Airplanes), including the following amendments:

- Amendment 25-137 in entirety GCF- 1608/2017 Annex – 4/8
- Amendment 25-138 in entirety
- Amendment 25-139 in entirety
- Amendment 25-141 in entirety

No reversion to earlier amendments of Part 25, as prescribed under § 21.101(b)(3), was identified for this project.

3. EASA Airworthiness Requirements

Refer to EASA TCDS EASA.IM.A.071.

4. CAA Airworthiness Requirements

4.1. Applicable CS Requirements at the Reference Date

CS-25 Amdt. 14 (dated 19 December 2013)

CS 25.851(a)(6) at Amdt. 18 with regards to the equipment installation and qualification of Halon free hand-held Fire Extinguishers

CS-AWO Initial Issue (dated 17 October 2003)

CS Definitions at Amendment 2

4.2 Reversions

CS 25.963(e)(1) is applied at Amendment 13 with respect to fuel tank protection from engine debris.

Note: For the fuel tank protection from wheel & tyre failure debris CS 25.963(e)(1) and associated CS 25.734 will be applied at Amendment 14.

5. Special Conditions

The following Special Conditions have been applied.

E2/B-25	Flight Envelope protection: General Requirements
E2/B-28	Flight Envelope protection: High AoA Protection
E2/B-29	Performance Credit for ATTCS During Go-Around
E2/C-26	Landing Pitchover Condition
E2/D-46	Electronic Flight Control System: Control Surface Position Awareness, Multiple Modes of Operation, Flight Control in all Attitudes
E2/D-49	Seats with Non-Traditional, Large, Non-Metallic Panels
E2/D-53	Electrical/Electronic Equipment Bay Fire Detection and Smoke Penetration
F-40B	Data Link Services
F-41	Flight Recorders including Data Link Recording

E2/E-20	Water / Ice in fuel
E2/E-21	Cowl loss prevention
F-01	Protection from the effects of HIRF
E2/F-58	Security Protection of Aircraft Systems & Networks
E2/F-65	Non-rechargeable Lithium-Ion Batteries (cover to CRI to ANAC FCAR SE-09)

6. Deviations

No deviations have been granted.

7. Equivalent Safety Findings

The following Equivalent Safety Findings have been granted:

E2/B-24	Electronic Flight Control System: Mis-trim Manoeuvring (cover CRI to ANAC FCAR EV-35)
E2/D-44	Flight Control System Failure Criteria
E2/D-47	Tyre Speed Rating
E2/D-48	Emergency Exit Locator Sign (cover CRI to ANAC FCAR EI-18)
E2/D-51	Protection of Flight Crew Compartment - Reduced Energy (cover to CRI to ANAC FCAR EI-16)
E2/D-69	Aerodynamic Seals and Flap track fairings compliance to CS 25.867
E2/D-72	Minor Obstruction to Type III Exit (cover CRI to ANAC FCAR EI-29)
E2/D-73	Combined Aircraft Pressurization Outflow and Positive Pressure Differential Relief Valves (cover CRI to ANAC FCAR SM-18)
E2/E-22	PW1900G Nacelle designated fire zones
E2/E-34	Lack of On/Off Switch for Automatic Takeoff Thrust Control System (ATTCS) (cover CRI to ANAC FCAR PR-18)
F-47	Lavatory Oxygen System Restoration
E2/F-64	Pneumatic Systems Harmonized 25.1438 (cover CRI to ANAC FCAR SM-21)
E2/F-68	Crew Determination of Quantity of Oxygen in Lavatory and Cabin Oxygen (cover CRI to ANAC FCAR SM-11)
E2/F-70	Determination of Minimum Oxygen Flow for the Passenger Oxygen System (cover CRI to ANAC FCARs SM-10 and SM-12)
E2/F-75	Position Lighting Systems Maximum Overlapping Intensity Deviations (cover CRI to ANAC FCAR SE-14)
E2/G-05	Digital only Display for Powerplant System Indications

8. Environmental Protection Standards

Noise:	CS-36 Amdt. 3 (dated 29 January 2013) (see TCDSN UK.TC.00071 for details)
Prevention of intentional fuel venting:	CS-34 Amdt. 1 (dated 28 January 2013)

9. Operational Suitability Data Requirements

The UK CAA type certification basis with respect to Operational Suitability Data (OSD) is defined as follows:

MMEL: As per CRI A-MMEL, the applicable certification basis for the establishment of Operational Suitability Data (OSD) MMEL is:
JAR MMEL/MEL Amendment 1, Section 1 with CS-MMEL Book 2 Initial issue as AMC/GM.

FCD: The applicable certification basis for the establishment of Operational Suitability Data (OSD) Flight Crew is:

CS-FCD, Initial Issue, dated 31 January 2014.

CCD: As per CRI A-CCD, the applicable certification basis for the establishment of Operational Suitability Data (OSD) Cabin Crew is:
CS-CCD, Initial Issue, dated 31 January 2014.

III. Technical Characteristic and Operating Limitations

1. Production Basis

Manufactured under Production Certificate (ANAC COP E-7203-1)

2. Type Design Definition

Defined by Report 196TDD400 “Type Design Standard Document” at Revision A.

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 aluminium-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. Equipment

Required equipment is listed in Embraer Document Reference 196TDD400: “Type Design Standard Document” at Revision A.

5. Dimensions

Length 41.603 m (136 ft 49 in)

Span 35.124 m (115 ft 2 in)

Height 10.71 m (35 ft 2 in)

Wing Area 103 m^2 (1108.7 ft^2)

6. Engines

Two Pratt & Whitney Turbofan engines, models: PW1921G or PW1923G or PW1923G-A

Limitations: See Engine Type Data Sheet No. IM.E.090 Issue 7 dated 12 December 2019 or Airplane Flight Manual

7. Auxiliary Power Unit

Pratt & Whitney Rzesów APS2600[E]

Limitations: Refer to the APU ETSO and DDP referenced therein

8. Propellers

Not applicable.

9. Fluids (Fuel, Oil, Additives, Hydraulics)

Refer to applicable approved manuals

10. Fluid Capacities

Refer to applicable approved manuals

11. Airspeed Limits:

See Airplane Flight Manual

12. Maximum Operating Altitude

12,497 m (41,000 ft) pressure altitude

13. All Weather Capability

Cat II, CAT III Fail-Passive Autoland without Rollout Guidance

14. Maximum Certified Masses

190-400 Phase							
Taxi and Ramp		Take-off		Landing		Zero Fuel	
122,136 lb[1]	55,400 kg [1]	121,695 lb[1]	55,200 kg [1]	119,049 lb	54,000 kg	114,309 lb	51,850 kg
123,238 lb[2]	55,900 kg [2]	122,797 lb[2]	55,700 kg [2]				
124,340 lb[3]	56,400 kg [3]	123,899 lb[3]	56,200 kg [3]				
125,443 lb[4]	56,900 kg [4]	125,002 lb[4]	56,700 kg [4]				
126,545 lb[5]	57,400 kg [5]	126,104 lb[5]	57,200 kg [5]				
127,647 lb[6]	57,900 kg [6]	127,206 lb[6]	57,700 kg [6]				
129,749 lb[7]	58,400 kg [7]	128,309 lb[7]	58,200 kg [7]				
129,852 lb[8]	58,900 kg [8]	129,411 lb[8]	58,700 kg [8]				
130,954 lb[9]	59,400 kg [9]	130,513 lb[9	59,200 kg [9]				
132,056 lb[10]	59,900 kg [10]	131,615 lb[10]	59,700 kg [10]				
133,159 lb[11]	60,400 kg [11]	132,718 lb[11]	60,200 kg [11]				
134,261 lb[12]	60,900 kg [12]	133,820 lb[12]	60,700 kg [12]				
135,363 lb[13]	61,400 kg [13]	134,922 lb[13]	61,200 kg [13]				
136,265 lb[14]	61,700 kg [14]	135,584 lb[14]	61,500 kg [14]				
137,127 lb[15]	62,200 kg [15]	136,686 lb[15]	62,000 kg [15]				

(x) For airplanes Post-Mod. or equipped with an equivalent modification factory incorporated.

[1]SB 190E2-00-0029 (MTOW 55,200 kg – 121,695 lb)

[2]SB 190E2-00-0030 (MTOW 55,700 kg – 122,797 lb)

[3]SB 190E2-00-0031 (MTOW 56,200 kg – 123,899lb)

[4]SB 190E2-00-0032 (MTOW 56,700 kg – 125,002 lb)

[5]SB 190E2-00-0033 (MTOW 57,200 kg – 126,104 lb)

[6]SB 190E2-00-0034 (MTOW 57,700 kg – 127,206 lb)

[7]SB 190E2-00-0035 (MTOW 58,200 kg – 128,309 lb)

[8]SB 190E2-00-0036 (MTOW 58,700 kg – 129,411 lb)

[9]SB 190E2-00-0037 (MTOW 59,200 kg – 130,513 lb)

[10]SB 190E2-00-0038 (MTOW 59,700 kg – 131,615 lb)

[11]SB 190E2-00-0039 (MTOW 60,200 kg – 132,718 lb)

[12]SB 190E2-00-0040 (MTOW 60,700 kg – 133,820 lb)

[13]SB 190E2-00-0041 (MTOW 61,200 kg – 134,922 lb)

[14]SB 190E2-00-0042 (MTOW 61,500 kg – 135,584 lb)

[15]SB 190E2-00-0053 (MTOW 62,000 kg – 136,686 lb)

15. Centre of Gravity Range

See Airplane Flight Manual

16. Datum

A perpendicular plane to the fuselage centre line, located at 15, 903 mm ahead of the wing stub front spar.

17. Mean Aerodynamic Chord (MAC)

3.665 m (12ft. 0 in.)

18. Levelling Means

See Weight and Balance Manual

19. Minimum Flight Crew

Two (Pilot and Co-pilot) for all types of flight

20. Maximum Seating Capacity

The table below provides the certified Maximum Passenger Seating Capacities (MPSC), the corresponding cabin configuration (exit arrangement) and the associated minimum numbers of cabin crew members used to demonstrate compliance with the certification requirement:

Passenger Seating Capacity & Cabin Configuration	Cabin crew
146 (I-III-III-I)	3

21. Exits

Exit	Number	Type	Size mm
1 Main Fwd LH	1	Type I	750 mm (w) x 1820.9 mm (h)
2 Main Aft LH	1	Type I	635 mm (w) x 1706.1 mm (h)
3 Overwing Emergency Doors (LH)	1	Type III	601.6 mm (w) x 1032.8 mm (h)
4 Overwing Emergency Doors (RH)	1	Type III	601.6 mm (w) x 1032.8 mm (h)
5 Service (Fwd, RH)	1	Type I	611 mm (w) x 1351.6 mm (h)
6 Service (Aft RH)	1	Type I	632 mm (w) x 1373.9 mm (h)
7 Cockpit Side Window (2)	Flight Crew Emergency Exits		483 mm (w) x 508 mm (h)

22. Baggage/ Cargo Compartment

Location	Class	Volume m^3 (ft^3)
Front Fwd (Underfloor)	C	14.77 m^3 (521.6 ft^3)
Rear Aft (Underfloor)	C	15.20 m^3 (536.8 ft^3)

23. Wheels and Tyres

Nose Assy (Qty 2) Tyre/Wheel: 27 x 8.5R12 16PR / 27 x 8.5-R12*

Main Assy (Qty 4) Tyre/Wheel: H42 x 16.0R20 24PR / H42 x 16.0-R20* Speed Rating: 225 mph

* The radial tyre is a standard item for ERJ190-400.

IV. Operating and Service Instructions

1. Flight Manual

Airplane Flight Manual, Document No. AFM 5693-001

2. Mandatory Maintenance Instructions

2.1 Aircraft Maintenance Manual

(Customised to aircraft configuration)

2.2 Maintenance Review Board Report

Maintenance Review Board Report Ref: MRB-5881, Revision 0 or subsequent approved revision.

The National Requirements identified in Appendix E of the MRBR as applicable to aircraft operating under EASA jurisdiction are applicable to aircraft operating under UK CAA jurisdiction.

2.3 Airworthiness Limitations and Certification Maintenance Requirements

MRB Report (MRB-5881): Appendix A Part 1 (Certification Maintenance Requirements)

Appendix A Part 2 (Structural Inspection Fatigue Limits ALI)

Appendix A Part 3 (Fuel System Limitation Items - FSL)

Appendix A Part 4 (Life Limit Items – LLI)

2.4 Structural Repair Manual

SRM-6736 is applicable.

3. Service Letters and Service Bulletins

As published by EMBRAER and approved by ANAC.

V. Operational Suitability Data

1. Master Minimum Equipment List

MMEL revisions up to 31 December 2020 were approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and were accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement. MMEL-5814 Rev 7 was in force as of 31 December 2020.

Following EU-exit, the updated Operational Suitability Data with a specific UK reference listed below is approved by the UK CAA under UK.MAJ.00230 acting in accordance with Regulation (EU) 2018/1139 and Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018.

a. The Master Minimum Equipment List has been approved as per the defined Operational Suitability Data Certification Basis recorded in CRI A-MMEL and as documented in EMBRAER 170/175/190/195 UK CAA Master Minimum Equipment List MMEL-8350, Original Revision, dated 24 July 2023.

b. Required for entry into service by UK operator.

2. Flight Crew Data

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

a. The Flight Crew data has been approved as per the defined Operational Suitability Data Certification Basis recorded in CRI A-FCD and as documented in EASA Operational Suitability Data (OSD) Flight Crew - ERJ 170/190 Report 170MSO092, Revision E, dated 25 February 2019, or later EASA approved revisions prior to 01 January 2021, or UK CAA approved revisions from 01 January 2021.

b. Required for entry into service by UK operator.

c. Pilot Type Rating: The licence endorsement for the ERJ 190-400 models aircraft is "EMB170". The ERJ 190 and the ERJ 170 series aircraft are variants of the same type of aircraft.

3. Cabin Crew Data

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.071 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014 and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

a. The Cabin Crew Data has been approved as per the defined Operational Suitability Data Certification Basis: CS-CCD, Initial Issue, and as documented in the “Embraer Report No: 196MSO1007, revision A, dated 5 April 2019 - Operational Suitability Data Cabin Crew, Program: ERJ 170/ ERJ 175/ ERJ 190/ ERJ 195/ ERJ 190E2/ ERJ 195E2”, or later EASA approved revisions prior to 01 January 2021, or UK CAA approved revisions from 01 January 2021.

b. Required for entry into service by UK operator.

c. For cabin crew, the ERJ 190-400 aircraft model is determined to be a variant to the ERJ 190-100 model. For cabin crew, the ERJ 190-300 aircraft model is determined to be a variant to the ERJ 190/195, the ERJ 170/175 models and the ERJ 190-300 models.

VI. Notes

Reserved.

Section 6 Administration

I. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
ACAS	Airborne Collision Avoidance System
AFM	Airplane Flight Manual
AMC	Acceptable Means of Compliance
ANAC	Agência Nacional De Aviação Civil (CAA Brazil)
APU	Auxiliary Power Unit
AWO	All Weather Operations
CAA	(United Kingdom) Civil Aviation Authority
CRI	Certification Review Item
CS	Certification Specification
EASA	European Union Aviation Safety Agency
EMB	EMBRAER
ERJ	Embraer Regional Jet
ES(F)	Equivalent Safety (Finding)
EWIS	Enhanced Wiring Interconnection System
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FSL	Fuel System Limitation
HIRF	High Intensity Radiated Field
ICA	Instructions for Continued Airworthiness
ICAO	International Civil Aviation Organization
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirements
LLI	Life Limited Item
MMEL	Master Minimum Equipment List
MRB	Maintenance Review Board
NPA	Notice of Proposed Amendment
OSD	Operational Suitability Data
RVSM	Reduced Vertical Separation Minima
S/N	Serial Number
SB	Service Bulletin
SC	Special Condition
TC	Type Certificate
TCDS	Type Certificate Data Sheet
TSO	Technical Standards Order

II. Type Certificate Holder Record

TCH Record	Period
EMBRAER S.A. Av. Brig. Faria Lima. 2170 12227-901 São Jose dos Campos – SP Brazil	Present.
Yaborã Indústria Aeronáutica S.A. Av. Brig. Faria Lima. 2170 12227-901 São Jose dos Campos – SP Brazil	Before 01 Jan 2022
Embraer S.A. Av. Brig. Faria Lima. 2170 12227-901 São Jose dos Campos – SP Brazil	Before 31 Jan 2020
Empresa Brasileira de Aeronáutica SA Av. Brig. Faria Lima. 2170 12227-901 São Jose dos Campos – SP Brazil	Before Jan 2011

III. Amendment Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	20 Jun 2023	The content of the initial issue of UK CAA TCDS was taken from EASA TCDS No. EASA.IM.A.071 Issue 21 dated 28 August 2020 which was the current EASA version at 31 December 2020 and therefore the version of the TCDS for the EMBRAER ERJ 190 accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement. Section 1 II.2. The following general changes have been made to reflect EU-Exit as well as corrections: • Where relevant “EASA” removed and replaced by “UK CAA“. • General editorial corrections • Section 1, I. – General section added to explain the relationship with the previously approved EASA TCDS and the effectivity of the UK CAA TCDS. • Section 1, II. – Marketing designations located in the notes section in the accepted EASA TCDS moved to this new section. • Section 2/3/4, I.7 – New section to cover the UK CAA type validation application date. • Section 2/3/4/5, II.1 & 2 – “(Certification Authority)” added. ANAC TCDS reference corrected. • Section 2/3/4/5, II.3 – Section added to reference EASA airworthiness requirements. • Section 2/3/4/5, II.4 – “UK CAA” added • Section 2/3/4/5, II.8 – Environmental Standards updated and reference to new UK CAA TCDSN added. • Section 2/3/4/5, III.6 – Correction of TCDS reference. • Section 2/3/4/5, IV.2.2 – Update to add clarification on National Requirements applicable to the UK CAA. • Section 2/3/4/5, V 1 – Clarification added on approved revisions.	Issue 1 20 Jun 2023

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
		• Section 2/3/4/5, V.2 - Clarification added on approved revisions. • Section 2/3/4/5, V.3 - Clarification added on approved revisions. • Section 2, VI. Notes – Note 3 updated to change “have to” to “must” to ensure requirement is clearer. The following changes have been made to reflect validation of design changes by the UK CAA since 01 January 2021: • Cover: Yaborã Indústria Aeronáutica S.A.changed to EMBRAER S.A as the TCH. ERJ 190-300: • Section 4.II.7: Added EASA CRI E2/C-38 due to approval of UK.MAJ.00225: DCA 0190-053_00073_2018/CAA-UK Rev – (01 December 2022). • Section 4.III.13: Update to include CAT III Fail-Passive Autoland without Rollout Guidance due to approval of UK.MAJ.00240: DCA 0190-000-00077-2020/CAA-UK Rev – (19 December 2022). ERJ 190-400: • Section 5.III.13: Update to include CAT III Fail-Passive Autoland without Rollout Guidance due to approval of UK.MAJ.00240: DCA 0190-000-00077-2020/CAA-UK Rev – (19 December 2022). • Section 5.II.14: Increase Maximum Certified Weights for Taxi, Ramp and MTOW by 500 Kg due to approval of UK.MAJ.00236: DCA 0190-000-00026-2020/CAA-UK Rev- (20 December 2022). Other editorial changes: • Update on the APU Supplier to Pratt & Whitney Rzeszów S.A. [ERJ 190-300 and ERJ 190-400]	
2	24 July 2023	Section 2/3/4/5.V: New UK CAA MMEL reference and approval explanation added.	Issue 1 20 Jun 2023
3	01 Aug 2023	Section 2/3/4/5.V: Correction to UK CAA MMEL reference and date of release.	Issue 1 20 Jun 2023

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