TYPE-CERTIFICATE DATA SHEET

No. EASA.IM.A.071

for

EMBRAER ERJ-190

Type Certificate Holder:

Embraer S.A.

Av. Brig. Faria Lima. 2170

12227-901 São Jose dos Campos SP

Brazil

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, ERJ 190-300, ERJ 190-400

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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
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

5. **Type Certificate Holder:** **Embraer S.A.**
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 and Note 8)

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

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

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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:**

i) 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.

ii) For ERJ 190-100 IGW post-MOD SB 190-25-0270 (E-Freighter) the following ANAC Certification Basis applies:

Based on the RBAC 21.101, the certification basis for ERJ 190-100 Freighter Configuration is as follows:
RBAC 25 Amendment 146 with exceptions requested and permitted by RBAC 21.101 for the requirements RBHA 25.611, RBHA 25.571, Appendix H25.4, RBAC 25.795(c)(2), RBHA 25.855, RBHA 25.869, RBHA 25.1301, RBAC 25.1302, RBHA 25.1309, RBHA 25.1316(*), RBAC 25.1317(*), RBHA 25.1322, RBHA 25.1353, RBHA25.1357, RBHA 25.1435(c)(3) and Subpart H (RBAC 25.1701 to 25.1733), for which the baseline certification basis is maintained, plus additional applicable Special Conditions, Equivalent Levels of Safety Findings, Exemptions and Deviations.
(*) Applicable to Air Management System and Smoke Detection System only.
For parts and areas not affected by the change, the baseline certification basis is maintained.

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 except 4.4. below

4.3 Applicable CS Requirements at the Reference Date for ERJ 190-100 IGW post-MOD SB 190-25-0270 (E-Freighter):

CS 25, Amdt 27 (Effective 24 November 2021)

CS-AWO

Post-MOD SB 190-25-0270 (E-Freighter), the Certification basis for affected areas of the ERJ 190-100 IGW is amended by the following:

CS-25 Amdt 1: 25.1309

CS-25 Amdt 27:

H25.3(a)(1)	25.561(a)	25.811(c)
H25.3(a)(2)	25.561(b)	25.811(f)(1)
H25.3(a)(3)	25.561(c)	25.811(f)(2)
H25.3(a)(4)	25.561(d)	25.812(a)(1)
H25.3(b)(2)	25.563	25.812(b)(1)(i)
H25.3(b)(3)	25.581	25.812(d)
H25.3(b)(4)	25.601	25.812(e)
H25.3(d)	25.603	25.812(f)(1)
H25.3(f)	25.607(c)	25.812(g)(2)
25.23	25.609	25.812(i)
25.25	25.613(b)	25.812(l)
25.27	25.613(c)	25.831(a)
25.29	25.613(f)	25.831(c)
25.302	25.619	25.841(a)
25.303	25.625(a)	25.843(a)
25.305(a)	25.625(b)	25.851(a)(1)
25.305(b)	25.625(c)	25.851(a)(4)
25.305(c)	25.625(d)	25.851(a)(7)
25.305(f)	25.629(a)	25.851(a)(8)
25.307(a)	25.629(b)	25.853(a)
25.321(b)	25.629(c)	25.857(e)

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25.321(c)	25.629(d)	25.858
25.331(b)	25.671(c)(3)	25.863
25.331(c)	25.731(b)	25.899
25.333(a)	25.731(c)	25.901(c)
25.337(a)	25.733(b)	25.903(c)
25.341(a)	25.733(c)	25.903(d)
25.341(b)	25.772(b)	25.1316 **(*)**
25.341(c)	25.772(c)	25.1317 **(*)**
25.345(a)	25.777(a)	25.1351(a)(1)
25.345(b)	25.783(a)(1)	25.1360
25.345(d)	25.783(a)(2)	25.1411(a)
25.349(a)	25.783(a)(3)	25.1411(b)
25.349(b)	25.783(a)(4)	25.1411(c)
25.351	25.783(a)(5)	25.1431(c)
25.365(a)	25.783(b)(1)	25.1431(d)
25.365(b)	25.783(b)(2)	25.1438
25.365(c)	25.783(c)(1)	25.1439(a)
25.365(d)	25.783(d)(1)	25.1439(b)
25.365(e)	25.783(d)(2)	25.1441(a)
25.365(f)	25.783(d)(3)	25.1441(b)
25.365(g)	25.783(d)(5)	25.1441(c)
25.367	25.783(d)(6)	25.1443(d)
25.373(a)	25.783(e)(1)	25.1447(a)
25.391	25.783(e)(2)	25.1447(b)
25.471(b)	25.783(e)(3)	25.1447(c)(1)
25.473(c)	25.783(e)(4)	25.1453(a)
25.479(a)	25.783(f)	25.1453(b)
25.479(d)	25.785(a)	25.1453(d)
25.481(a)	25.785(b)	25.1453(f)
25.483(a)	25.785(c)	25.1501
25.485(b)	25.785(d)	25.1519
25.489	25.785(i)	25.1525
25.491	25.785(k)	25.1529

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25.493(b)	25.787(a)	25.1541(a)
25.493(d)	25.787(b)	25.1541(b)
25.495	25.787(c)	25.1555(a)
25.499(b)	25.789(a)	25.1557(a)
25.499(c)	25.789(b)	25.1561(b)
25.499(d)	25.791(a)	25.1561(c)
25.499(e)	25.791(b)	25.1581
25.503(a)	25.801(e)	25.1583(c)
25.507(a)	25.803(a)	25.1583(e)
25.509(a)	25.807(a)(1)	25.1585(a)(1)
25.511	25.810(a)(1)(i)	25.1585(a)(3)
25.519	25.810(a)(1)(iii)	
	25.810(a)(2)	

(*) Except Air Management System and Smoke Detection System

For changes that affect or introduce fatigue critical structures JAR 25.571 Change 15 applies, plus:

1. For structures susceptible to widespread fatigue damage (WFD),

   a. WFD evaluations must substantiate freedom from WFD up to the existing limit of validity (LOV) or a new reduced LOV approved by EASA;

   b. Inspections and other maintenance actions upon which the LOV is dependent must be established and submitted to EASA for approval;

2. The list of fatigue critical modified structures (FCMS) must be developed or amended as necessary and make it available to aircraft operators as part of the ICA of the change;

3. The baseline corrosion prevention and control programme must be amended or supplemented to address the influence of the change on the effectiveness of the programme, as necessary.

Note 1: Points 1 and 3 do not apply to changes introduced by STC. Exception of point 3 must not compromise compliance with JAR 25.571 and 25.609 Change 15

Note 2: Points 1, 2 and 3 do not apply to repairs. Exception of point 3 must not compromise compliance with JAR 25.571 and 25.609 Chg 15

Note 3: CS 25.571 amdt 19 or later does not include the above exceptions for STC and repair applicants any longer.

Post-MOD SB 190-25-0270 (E-Freighter):

Note a) The LOV of 80,000 Flight Cycles or 106,400 Flight Hours (whichever occurs first) is approved regarding the structures affected by the modification. The LOV encompassing the entire airframe will be incorporated into the ALS together with the LOV for the baseline aircraft as per EASA 26.303 ;

Note b) The list of fatigue critical modified structures (FCMS) developed is made available to the operators through Fatigue Critical Structural Document (FCSD-3575) Revision 40 and later;

Note c) The baseline corrosion prevention and control programme applicable to the modified regions is incorporated in MRBR -1928 Revision 18 and later.

4.4 Reversions for ERJ190-100 IGW post-MOD SB190-25-0270 (E-Freighter):

JAR 25.611, JAR, 25.571, Appendix H25.4, CS 25.795(c)(2), JAR 25.855, JAR25.869, JAR 25.1301, CS 25.1302, CS 25.1309, JAR 25.1316(*), CS 25.1317(*), JAR 25.1322, JAR 25.1353, JAR 25.1357, JAR 25.1435(c)(3) and Subpart H (CS 25.1701 to CS 25.1733).

(*) Applicable to Air Management System and Smoke Detection System only.

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/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
(*) EASA/190/SC/CRI 190/D-53	Fire protection of Essential systems/equipment within class E cargo compartments
(*) EASA/190/SC/CRI 190/D-54	Redefined Flight Deck – 'Supernumerary'

(*) Applicable to ERJ190-100 IGW post-MOD SB190-25-0270 (E-Freighter) only.
(**) Applicable to ERJ 190-100 ECJ only

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-33 Firm Handhold

(**) Applicable to ERJ 190-100 ECJ only

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~~ (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 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	Bulkhead Exit Signs Equivalent Safety with JAR 25.811(d)(3)
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)

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	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

(*) EASA/190/SC/CRI 190/D-54 Redefined Flight Deck – 'Supernumerary'

(*) Applicable to ERJ190-100 IGW post-MOD SB190-25-0270 (E-Freighter) only.

8. **EASA Environmental Standards:**

Noise: ICAO Annex 16, Volume I (Third Edition). See the appropriate EASA Approved TCDSN for more information.
Fuel: ICAO Annex 16, Volume II (Second Edition)

9. **EASA Operational Suitability Data**

The EASA Type Certification 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 Characteristics and Operational Limitations

1. **Production Basis:** Manufactured under Type Production Certificate (ANAC COP E-7203-1)

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:** Pratt & Whitney Rzeszów S.A. APS2300
Limitations: Refer to the APU ETSO and DDP referenced therein

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 96624 lb(2) 101.412 lb(6) 99.207 lb(6) 98.325 lb(6) 97.002 lb(6)	47790 kg 43740 kg(2) 46.000 kg(6) 45.000 kg(6) 44.600 kg(6) 44.000 kg(6)	110892 lb 105359 lb(1) 110209 lb(3) 98988 lb(4) 101.412 lb(6) 99.207 lb(6) 98.325 lb(6) 97.002 lb(6)	50300 kg 47790 kg (1) 49990 kg (3) 44900 kg (4) 46.000 kg(6) 45.000 kg(6) 44.600 kg(6) 44.000 kg(6)	114199 lb 105359 lb(5)	51800 kg 47790 kg(5)	120150 lb 100000 lb(7) 95000 lb(7) 90000 lb(7)	54500 kg 45.360 kg(7) 43.092 kg(7) 40.824 kg(7)
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

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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 49990 kg(8) 50300 kg(9)
Landing	105816 lb	43000 kg
Zero Fuel	89944 lb	40800 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 190-00-0031 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.

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
The ERJ 190-100 IGW post-MOD SB 190-25-0270 (E-Freighter) is limited to 01 Supernumerary.

20. **Exits all ERJ 190-100 models except ERJ 190-100 ECJ (Lineage 1000) and ERJ 190-100 IGW post-MOD SB 190-25-0270 (E-Freighter):**

	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

The **ERJ 190-100 IGW post-MOD SB190-25-0270 (E-Freighter)** has the following exits available:

	Number	Type	Size mm (inches)
1 Main Fwd LH	1	Type I	780 mm (w) x 1840 mm (h)
5 Service Fwd, RH	1	Type I	640 mm (w) x 1380 mm (h)

The Overwing Emergency Doors (LH and RH) were locked and not operative.
For crew emergency evacuation purposes, the following exits are available on both sides:

3&4 Cockpit side window (2)	Flight Crew Emergency Exit	483 mm x 508 mm

For maintenance purposes, the following doors are available:

	Number	Type	Size mm (inches)
2 Main Aft LH	1	Type I	670 mm (w) x 1814 mm (h)
6 Service Aft RH	1	Type 1	670 mm (w) x 1395 mm (h)

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

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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 applies.

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. Operational Suitability Data (OSD)

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.

1. Master Minimum Equipment List

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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 EASA Master Minimum Equipment List MMEL-5814, Revision Original, December 2015, or later approved revisions.
b. Required for entry into service by EU operator.

2. Flight Crew Data

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 approved revisions.
b. Required for entry into service by EU 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

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 approved revisions.
b. Required for entry into service by EU 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 - 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-31are 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.

Note 7 -The ERJ 190-100 IGW is converted to freighter configuration by application of Embraer Service Bulletins (SB) nº SB 190-25-0270 (aircraft conversion to full cargo configuration).

Note 8 -The ERJ 190-100 IGW post-MOD SB 190-25-0270 does not constitute a new model, and it can be referred to in marketing literature as “EMBRAER 190F”, “E190F”, “E-Freighter”.

Note 9 -To carry cargo on ERJ 190-100 IGW post-MOD SB 190-25-0270, an EASA approved Cargo Loading System must be installed, which is not part of this TC.

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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)

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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~~ (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 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	Bulkhead Exit Signs Equivalent Safety with JAR 25.811(d)(3)

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
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. **EASA Environmental Standards:**

Noise: ICAO Annex 16, Volume I (Third Edition). See the appropriate EASA Approved TCDSN for more information.

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

9. **EASA Operational Suitability Data**

The EASA Type Certification 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.

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III. Technical Characteristics and Operational Limitations

1. **Production Basis:** Manufactured under Production Certificate (ANAC COP E-7203-1)

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:** Pratt & Whitney Rzeszów S.A. APS2300
   Limitations: Refer to the APU ETSO and DDP referenced therein

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 101411 lb(1)	48 790 kg 46000 kg(1)	111971 lb 107562 lb(2)	50 790 kg 48 790 kg(2)	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

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

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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.

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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-2411 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”

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V. Operational Suitability Data (OSD)

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.

1. Master Minimum Equipment List

   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 EASA Master Minimum Equipment List MMEL-5814, Revision Original, December 2015, or later approved revisions.
   b. Required for entry into service by EU operator.

2. Flight Crew Data

   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 approved revisions.
   b. Required for entry into service by EU 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

   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 approved revisions.
   b. Required for entry into service by EU operator.
   c. The Embraer 190/195 aircraft models are determined to be variants to the Embraer 170/175 aircraft models.

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VI 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”.

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SECTION 4 (EMBRAER ERJ 190-300 VARIANT)

I. General

1.	**Aeroplane:**	Embraer ERJ 190-300 (see Note 2)
2.	**EASA Validation Application Date:** (Reference date for EASA validation)	30 July 2013
3.	**EASA Validation Date:**	28 February 2018

II. Certification Basis

1.	**Reference Date for ANAC Certification:**	29 July 2013
2.	**ANAC Certification Date:**	28 February 2018

ANAC Type Certificate Data Sheet No. EA-2005T13

3. **ANAC 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.

4. **EASA Airworthiness Requirements:**

4.1 Applicable Requirements at the Reference Date:

CS 25 Amdt. 13 (dated 10 June 2013)
CS 25.851(a)(6) at Amdt. 18 in 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. **EASA 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 Issue 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. **EASA Deviations:**

No deviations have been granted.

7. **EASA Equivalent Safety Findings:**

The following Equivalent Safety Findings have been granted:

E2/B-24	Electronic Flight Control System: Mistrim Manoeuvring
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 Oxyten 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

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8. **EASA Environmental Standards:**

Noise: CS 36 Amdt. 3 (dated 29. January 2013). See the appropriate EASA Approved TCDSN for more information.

Fuel: CS 34 Amdt. 1 (dated 28 January 2013)

9. **EASA Operational Suitability Data**

The EASA Type Certification with respect to Operational Suitability Data (OSD) is defined as follows:

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: 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 Characteristics and Operational Limitations

1. **Production Basis:** Manufactured under Production Certificate (ANAC COP E-7203-1)

2. **Design Standard:** Defined by Report 196TDD300 “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	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)

5. **Engines:** Two Pratt & Whitney PW1919G or two Pratt & Wittney PW1922G Turbofan Engines

Limitations: See EASA Engine TCDS No. IM.E.090 or Airplane Flight Manual

6. **Auxiliary Power Unit:** Pratt & Whitney Rzeszów S.A. APS2600[E]
Limitations: Refer to the APU ETSO and DDP referenced

therein

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, Cat III Fail-Passive Autoland without Rollout Guidance

13. **Maximum Certified Weights:**

190-300 Phase							
Taxi and Ramp		Take-off		Landing		Zero Fuel	
110650 lb[28]	50190 kg [14]	110209 lb[28]	49990 kg [14]	108136 lb	49050 kg	102955 lb	46700 kg
111774 lb[15]	50700 kg [1]	111333 lb[15]	50500 kg [1]				
112876 lb[16]	51200 kg [2]	112435 lb[16]	51000 kg [2]				
113978 lb[17]	51700 kg [3]	113538 lb[17]	51500 kg [3]				
115081 lb[18]	52200 kg [4]	114640 lb[18]	52000 kg [4]				
116183 lb[19]	52700 kg [5]	115742 lb[19]	52500 kg [5]				
117285 lb[20]	53200 kg [6]	116844 lb[20]	53000 kg [6]				
118388 lb[21]	53700 kg [7]	117947 lb[21]	53500 kg [7]				
119490 lb[22]	54200 kg [8]	119049 lb[22]	54000 kg [8]				
120592 lb[23]	54700 kg [9]	120151 lb[23	54500 kg [9]				
121695 lb[24]	55200 kg [10]	121254 lb[24]	55000 kg [10]				
122797 lb[25]	55700 kg [11]	122356 lb[25]	55500 kg [11]				
123899 lb[26]	56200 kg [12]	123458 lb[26]	56000 kg [12]				
124781 lb[27]	56600 kg [13]	124340 lb[27]	56400 kg [13]				

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

[1]SB 190E2-00-0001 (MTOW 50500 kg)
[2]SB 190E2-00-0002 (MTOW 51000 kg)
[3]SB 190E2-00-0003 (MTOW 51500 kg)
[4]SB 190E2-00-0004 (MTOW 52000 kg)
[5]SB 190E2-00-0005 (MTOW 52500 kg)
[6]SB 190E2-00-0006 (MTOW 53000 kg)
[7]SB 190E2-00-0007 (MTOW 53500 kg)
[8]SB 190E2-00-0008 (MTOW 54000 kg)
[9]SB 190E2-00-0009 (MTOW 54500 kg)
[10]SB 190E2-00-0010 (MTOW 55000 kg)
[11]SB 190E2-00-0011 (MTOW 55500 kg)
[12]SB 190E2-00-0012 (MTOW 56000 kg)
[13]SB 190E2-00-0013 (MTOW 56400 kg)
[14]SB 190E2-00-0014 (MTOW 49990 kg)
[15]SB 190E2-00-0015 (MTOW 111333 lb)
[16]SB 190E2-00-0016 (MTOW 112435 lb)
[17]SB 190E2-00-0017 (MTOW 113538 lb)
[18]SB 190E2-00-0018 (MTOW 114640 lb)
[19]SB 190E2-00-0019 (MTOW 115742 lb)
[20]SB 190E2-00-0020 (MTOW 116844 lb)
[21]SB 190E2-00-0021 (MTOW 117947 lb)
[22]SB 190E2-00-0022 (MTOW 119049 lb)
[23]SB 190E2-00-0023 (MTOW 120151 lb)
[24]SB 190E2-00-0024 (MTOW 121254 lb)
[25]SB 190E2-00-0025 (MTOW 122356 lb)
[26]SB 190E2-00-0026 (MTOW 123458 lb)
[27]SB 190E2-00-0027 (MTOW 124340 lb)
[28]SB 190E2-00-0028 (MTOW 110209 lb)

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

15. **Datum:** A perpendicular plane to the fuselage centerline, located at 13 571 mm ahead of the wing stub front spar.

16. **Mean Aerodynamic Chord (MAC):** 3.665 m (12ft. 0 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 & Minimum Cabin Crew:**

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
100	(I-III-I)	2

20. **Exits:**

	Number	Type	Size mm (inches)
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)

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	10.09 m^3 (356.3 ft^3)
Rear Aft (Underfloor)	C	11.45 m^3 (404.4 ft^3)

22. **Wheels and Tyres:**
Nose Assy (Qty 2) Tyre/Wheel: 27x8.5R12 16PR / 27x8.5-R12*
Main Assy (Qty 4) Tyre/Wheel: H42x16.0R20 24PR / H42x16.0-R20*Speed Rating: 225 mph

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

IV. Operating and Servicing Instructions

1. **Flight Manual:**

Airplane Flight Manual, Document No. AFM 5693-001

2. **Mandatory Maintenance Instructions:**

2.1 Maintenance Review Board Report Ref: MRB 5881, Revision 0 or

Subsequent EASA approved revision

2.2 Airworthiness Limitations and Certification Maintenenance Requirements:
MRB Report P/N 5881:
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)

2.3 Structural Repair Manual SRM-2411 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 Report 196TDD300 “Type Design Standard Document” at Revision –

V. Operational Suitability Data (OSD)

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.

1. Master Minimum Equipment List

   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 170/175/190/195/190-E2/LINEAGE 1000 EASA Master Minimum Equipment List MMEL-5814, Revision 4, dated 6 February 2018, or later approved revisions.
   b. Required for entry into service by EU operator.

2. Flight Crew Data

   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 approved revisions.
   b. Required for entry into service by EU 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

   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 approved revisions.

b. Required for entry into service by EU 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

Note 1 - The models ERJ 190-300 are often referred to in Embraer marketing literature as "EMBRAER 190E2". These names are strictly marketing designations and are not part of the official models designation.

SECTION 5 (EMBRAER ERJ 190-400 VARIANT)

I. General

1.	**Aeroplane:**	Embraer ERJ 190-400 (see Note 1)
2.	**EASA Validation Application Date:** (Reference date for EASA validation)	20 July 2014
3.	**EASA Validation Date:**	15 April 2019

II. Certification Basis

1.	**Reference Date for ANAC Certification:**	30 April 2015
2.	**ANAC Certification Date:**	15 April 2019

ANAC Type Certificate Data Sheet No. EA-2005T13

3. **ANAC 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.

4. **EASA Airworthiness Requirements:**

4.1 Applicable Requirements at the Reference Date:

CS 25 Amdt. 14 (dated 19 December 2013)
CS 25.851(a)(6) at Amdt. 18 in 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. **EASA Special Conditions:**

The following Special Conditions have been applied.

E2/B-25	Flight Envelope protection: General Requirements (cover CRI to ANAC FCAR EV-37)
E2/B-28	Flight Envelope Protection: High AoA Protection Function (cover CRI to ANAC FCAR EV-25)
E2/B-29	Performance Credit for ATTCS during Go-Around (cover CRI to ANAC FCAR PR-02)
E2/C-26	Landing Pitchover Condition (cover CRI to ANAC FCAR ES-07)
E2/D-46	Electronic Flight Control System: Control Surface Position Awareness (cover CRI to ANAC FCAR SM-01)
E2/D-49	Seats with Non-Traditional, Large, Non-Metallic Panels (cover CRI to ANAC FCAR EI-13)
E2/D-53	Electrical/Electronic Equipment Bay Fire Detection and Smoke Penetration (cover CRI to ANAC FCAR SM-09)
F-40B	Data Link Services
F-41	Flight Recorders including Data Link Recording
E2/E-20	Water / Ice in Fuel System
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 CRI to ANAC FCAR SE-09)

6. **EASA Deviations:**

No deviations have been granted.

7. **EASA Equivalent Safety Findings:**

The following Equivalent Safety Findings have been granted:

E2/B-24	EFCS: Mistrim 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 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 (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. **EASA Environmental Standards:**

Noise: CS 36 Amdt. 3 (dated 29. January 2013). See the appropriate EASA Approved TCDSN for more information.

Fuel: CS 34 Amdt. 1 (dated 28 January 2013)

9. **EASA Operational Suitability Data**

The EASA Type Certification with respect to Operational Suitability Data (OSD) is defined as follows:

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: 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 Characteristics and Operational Limitations

1. **Production Basis:** Manufactured under Production Certificate (ANAC COP E-7203-1)

2. **Design Standard:** 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 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.

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4. **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)

5. **Engines:** Two Pratt & Whitney Turbofan Engines, models: PW1921G or PW1923G or PW1923G-A

Limitations: See EASA Engine TCDS No. IM.E.090 or Airplane Flight Manual

6. **Auxiliary Power Unit:** Pratt & Whitney Rzeszów S.A. APS2600[E]
Limitations: Refer to the APU ETSO and DDP referenced therein

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, Cat III Fail-Passive Autoland without Rollout Guidance

13. **Maximum Certified Weights:**

190-400 Phase							
Taxi and Ramp		Take-off		Landing		Zero Fuel	
122136 lb(1)	55400 kg (1)	121695 lb(1)	55200 kg (1)	119049 lb	54000 kg	114309 lb	51850 kg
123238 lb(2)	55900 kg (2)	122797 lb(2)	55700 kg (2)				
124340 lb(3)	56400 kg (3)	123899 lb(3)	56200 kg (3)				
125443 lb(4)	56900 kg (4)	125002 lb(4)	56700 kg (4)				
126545 lb(5)	57400 kg (5)	126104 lb(5)	57200 kg (5)				
127647 lb(6)	57900 kg (6)	127206 lb(6)	57700 kg (6)				
129749 lb(7)	58400 kg (7)	128309 lb(7)	58200 kg (7)				
129852 lb(8)	58900 kg (8)	129411 lb(8)	58700 kg (8)				
130954 lb(9)	59400 kg (9)	130513 lb(9	59200 kg (9)				
132056 lb(10)	59900 kg (10)	131615 lb(10)	59700 kg (10)				
133159 lb(11)	60400 kg (11)	132718 lb(11)	60200 kg (11)				
134261 lb(12)	60900 kg (12)	133820 lb(12)	60700 kg (12)				
135363 lb(13)	61400 kg (13)	134922 lb(13)	61200 kg (13)				
136265 lb(14)	61700 kg (14)	135584 lb(14)	61500 kg (14)				
137127 lb(15)	62200 Kg (15)	136686 lb(15)	62000 Kg (15)				
138229 lb(16)	62700 Kg (16)	137788 lb(16)	62500 Kg (16)				

(x) For airplanes Post-Mod. or equipped with an equivalent modification factory incorporated.
(1)SB 190E2-00-0029 (MTOW 55200 kg - 121695 lb)
(2)SB 190E2-00-0030 (MTOW 55700 kg - 122797 lb)
(3)SB 190E2-00-0031 (MTOW 56200 kg - 123899lb)
(4)SB 190E2-00-0032 (MTOW 56700 kg - 125002 lb)
(5)SB 190E2-00-0033 (MTOW 57200 kg - 126104 lb)
(6)SB 190E2-00-0034 (MTOW 57700 kg - 127206 lb)
(7)SB 190E2-00-0035 (MTOW 58200 kg - 128309 lb)
(8)SB 190E2-00-0036 (MTOW 58700 kg - 129411 lb)
(9)SB 190E2-00-0037 (MTOW 59200 kg - 130513 lb)
(10)SB 190E2-00-0038 (MTOW 59700 kg - 131615 lb)

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[11]SB 190E2-00-0039 (MTOW 60200 kg - 132718 lb)
[12]SB 190E2-00-0040 (MTOW 60700 kg - 133820 lb)
[13]SB 190E2-00-0041 (MTOW 61200 kg - 134922 lb)
[14]SB 190E2-00-0042 (MTOW 61500 kg - 135584 lb)
[15]SB 190E2-00-0053 (MTOW 62000 Kg – 136686 lb)
[16]SB 190E2-00-0058 (MTOW 62500 Kg – 137788 lb)

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

15. **Datum:** A perpendicular plane to the fuselage centerline, located at 15 903 mm ahead of the wing stub front spar.

16. **Mean Aerodynamic Chord (MAC):** 3.665 m (12ft. 0 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 & Minimum Cabin Crew:**

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
100	(I-III-III-I)	2

20. **Exits:**

	Number	Type	Size mm (inches)
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)	2	Type III	601.6 mm (w) x 1032.8 mm (h)
4 Overwing Emergency Doors (RH)	2	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)

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	14.77 m^3 (521.6 ft^3)
Rear Aft (Underfloor)	C	15.20 m^3 (536.8 ft^3)

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22. **Wheels and Tyres:**

Nose Assy (Qty 2)	Tyre/Wheel: 27x8.5R12 16PR / 27x8.5-R12*
Main Assy (Qty 4)	Tyre/Wheel: H42x16.0R20 24PR / H42x16.0-R20*Speed Rating: 225 mph

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

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IV. Operating and Servicing Instructions

1. **Flight Manual:**

Airplane Flight Manual, Document No. AFM 5693-001

2. **Mandatory Maintenance Instructions:**

2.1 Maintenance Review Board Report Ref: MRB 5881, Revision 1 or Subsequent EASA approved revision

2.2 Airworthiness Limitations and Certification Maintenenance Requirements:

MRB Report Ref. MRB 5881 Revision 1:
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)

2.3 Structural Repair Manual SRM-6736 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 Report 196TDD400 “Type Design Standard Document” at Revision A

V. Operational Suitability Data (OSD)

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.

1. Master Minimum Equipment List

a. The Master Minimum Equipment List has been approved as per the defined Operational Suitability Data Certification Basis and as documented in EMBRAER 170/175/190/195/190-E2/195-E2/LINEAGE 1000 EASA Master Minimum Equipment List MMEL-5814, Revision 6, dated 15 April 2019, or later approved revisions.
b. Required for entry into service by EU operator.

2. Flight Crew Data

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 approved revisions.
b. Required for entry into service by EU 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.

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3. Cabin Crew Data

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 approved revisions.
b. Required for entry into service by EU 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 190-400 aircraft model is determined to be a variant to the ERJ 190/195, the ERJ 170/175 and the ERJ 190-300 models.

VI Notes

Note 1 - The model ERJ 190-400 are often referred to in Embraer marketing literature as "EMBRAER 195-E2". These names are strictly marketing designations and are not part of the official models designation.

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

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
CRI	Certification Review Item
CS	Certification Specification
EASA	European Union Aviation Safety Agency
ES(F)	Equivalent Safety (Finding)
EWIS	Enhanced Wiring Interconnection System
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
HIRF	High Intensity Radiated Field
ICA	Instructions for Continued Airworthiness
ICAO	International Civil Aviation Organization
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirements
MRB	Maintenance Review Board
NPA	Notice of Proposed Amendment
S/N	Serial Number
SB	Service Bulletin
SC	Special Condition
TC	Type Certificate
TCDS	Type Certificate Data Sheet

II. Type Certificate Holder Record

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

Before 1 January 2022:
Yaborã Indústria Aeronáutica S.A.
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

Before 31 January 2020:
Embraer S.A.
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

Before January 2011:
Empresa Brasileira de Aeronáutica SA
Av. Brig. Faria Lima. 2170
12227-901 São Jose dos Campos SP
Brazil

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SECTION: ADMINISTRATIVE - continued

III. 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”.
Iss. 12.0	04 July 2013	- For ERJ 190-100 and ERJ 190-200 models, Section 2.II.7 and 3.II.7: Update ESF JAA/170/ES/CRI B-17 - Section 2.III.13: MTOW reduced to 43740kg for ERJ 190-100 - Section 3.IV.2.4: SRM -2411 is introduced
Iss. 13.0	02 June	- Section 2.II.6: reference of Firm Handhold Deviation corrected to D-33. - Section 2.II.7 & 3.II.7: ESF CRI F-47 is introduced for ERJ 190 models with DCA 0190-035-00074-2012/EASA embodied and ESF CRI F-50 is introduced for ERJ 190 models with DCA 0190-033-00027-2013/EASA embodied. - Introduction of reduced MTOW of 98988 lb / 44900 kg and 110209 lb / 49990 kg for ERJ 190-100 LR; and of 105359 lb / 47790 kg for ERJ 190-100 IGW, when DCA 0190-000-00032-2013/EASA is embodied. - Introduction of reduced MTOW of 101411 lb / 46000 kg for ERJ 190-200 STD, when DCA 0190-000-00011-2014/EASA is embodied. - Section V, Note 4: Reference of CRI “Installation of Door between passenger compartments” corrected to D-31.
Iss. 14.0	10 December 2015	- Section 2.II.9: EASA Operational Suitability Data - Section 2.V: Operational Suitability Data - Section 3.II.9: EASA Operational Suitability Data - Section 3.V: Operational Suitability Data
Iss. 15.0	15 March 2016	Section 2.III.13: Maximum Certified Weights - Reduced MTOW for ERJ 190-100 STD/LR introduced in accordance with DCA 0190-000-00201-2015/EASA Rev. A
Iss. 16.0	9 March 2017	Section 2.III.13: Maximum Certified Weights - Reduced MTOW for ERJ 190-100 ECJ introduced in accordance with DCA 0190-000-00073-2016/EASA Rev. A Section 3.III.13: Maximum Certified Weights - Reduced MTOW for ERJ 190-200 LR introduced in accordance with DCA 0190-000-00099-2016/EASA Rev. -
Iss. 17.0	28 February 2018	Section 2.III.13: Maximum Certified Weights - Increased MTOW for ERJ 190-100 SR introduced in accordance with DCA 0190-000-00096-2017 /EASA Rev. B Section 4: EMBRAER ERJ 190-300 VARIANT

		- New section 4 added for introduction of new ERJ 190-300 variant Section 5: Change Record - Former section 4 shifted to section 5
Iss. 18.0	3 April 2018	Section 4.III.5: Engines - Corrected the applicable engine models Section 4.III.6: Auxiliar Power Unit - Corrected the applicable APU model Section 4.III.13: Maximum Certified Weights - List of MTOW for ERJ-300 introduced in accordance with the approved approved type Design Section 4.III.15: Datum - Corrected the datum distance Section 4.IV.1:Flight Manual - Added the -001 to the AFM version Section 4.IV.4:Required Equipment - Updated the document reference
Iss. 19.0	15 April 2019	Section 4.II.9: EASA Operational Suitability Data - References to CRIs removed Section 5: EMBRAER ERJ 190-400 VARIANT - New section 5 added for introduction of new ERJ 190-400 variant Section 6: Change Record Former section 5 shifted to section 6
Iss. 20.0	31/01/2020	Transfer of Type Certificate Holder from “Embraer S.A.” to “Yaborã Indústria Aeronáutica S.A.” EASA name reference changed to “European *Union* Aviation Safety Agency” Section 6: Section renamed from “*Section 6 Change Record*” to “*Section: Administrative*”
Iss. 21.0	28 August 2020	Section 2.III.6: Auxiliary Power Unit - ETSO Holder corrected Section 3.III.6: Auxiliary Power Unit - ETSO Holder corrected Section 4.II.8: EASA Environmental Standards - EASA Certification Basis for Noise for ERJ 190-300 updated. Section 5.II.8: EASA Environmental Standards - EASA Certification Basis for Noise for ERJ 190-400 updated.
Iss. 22.0	26 January 2021	Section 4.III Technical Characteristics and Operational Limitations - Updated the All Weather Capability for ERJ 190-300, adding ‘Cat III Fail-Passive Autoland without Rollout Guidance’ due to approval of DCA 0190-022-00085-2018
Iss. 23	9 June 2021	Section 5.III Technical Description and Operational Limitations Updated MTOW from 61500 Kg to 62000 kg and MRW from 61700 Kg to 62200 Kg. Included note (15) SB 190E2-00-0053 Editorial changes in Sections 2, 3, 4 and 5.
Iss. 24	31.January 2022	TC Holder Transfer Update Section 5.III Technical Characteristics and Operational Limitations Updated the All Weather Capability for ERJ 190-400, adding ‘Cat III Fail-Passive Autoland without Rollout Guidance’ due

		to approval of DCA 0190-022-00077-2020Section 4 and 5.III Technical Characteristics and Operational Limitations - Editorial update for Pratt & Whitney designation. Update on the APU Supplier to Pratt & Whitney Rzeszów S.A. Editorial changes in Sections 1, 2, 3, 4 and 5 Re-published on 1/1/2022 with re-formatted front page
Iss. 25	2.April 2024	Section 4.III Technical Description and Operational Limitations 19. Maximum Passenger Capacity & Minimum Cabin Crew: Additional Passenger Seating Capacity & Cabin Configuration Section 5.III Technical Description and Operational Limitations 13.Maximum Certified Weights Additional MTOW 62500 Kg and MRW 62700 Kg 19. Maximum Passenger Capacity & Minimum Cabin Crew: Additional Passenger Seating Capacity & Cabin Configuration Corrected description of JAA/170ESF/CRI 190/D-28
Iss. 26	07.Nov 2024	SECTION 2 (EMBRAER ERJ 190-100 VARIANT): Addition of 190-100 Freighter Editorial corrections

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