TYPE-CERTIFICATE DATA SHEET

No. EASA.IM.A.188

for

EMB-120

Type Certificate Holder:

Embraer S.A.

Av. Brig. Faria Lima. 2170

12227-901 São Jose dos Campos SP

Brazil

For Models: EMB-120
EMB-120ER
EMB-120RT

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SECTION 1: GENERAL (ALL MODELS)

I. General

1. Airworthiness Category

Large Aeroplanes

2. Performance Class

A

3. Certifying Authority

ANAC Agência Nacional de Aviação Civil
Gerência Geral de Certificação de Produtos Aeronáuticos
P.O. Box 6001
12228-901 - São José dos Campos - SP
Brazil

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

II. Certification Basis

1. State of Design Airworthiness Authority Type Certification Data Sheet No EA-8505-10

2. EASA Type Certification Basis

The Certification Basis refers to the ANAC TC 8505 in accordance with the following requirements:

RBHA 25 Airworthiness Requirements for Aircraft Transport Category -corresponding to FAR 25 of Federal Aviation Administration, including amendment 25-1 through amendment 25-54 effective 14 October 1980.

Airplanes incorporating Embraer Service Bulletin No.120-025-0220 comply with RBHA/FAR 25.811(c)(2)(ii), Amendment 25-79, instead of RBHA/FAR 25.811(e)(3), Amendment 25-54.

RBHA 21 - Certification Procedures for Aeronautical Products and Parts, Subpart B.

SFAR 27 of Federal Aviation Administration, including amendment 27-1 through 27-5 effective 11 January 1984.

Compliance has been shown with section 25.832 of FAR Part 25 amendment 25-56 effective 31 January 1983.

Compliance with the structural requirements for ditching, RBHA/FAR 25.801(b), (c), (d), (e), has been established.

Compliance with the ice protection requirements, RBHA/FAR 25.1419, has been established.

2.1. Special Conditions

No Special Conditions have been applied.

2.2. Equivalent Safety Findings

An equivalent safety finding has been established to RBHA/FAR 25.783(g)-cargo door.

2.3. Deviations

No Deviations have been aplplied.

2.4. Exemptions

Exemption for the RBHA/FAR 25.571(e)(2) has been granted in accordance with CTA letter 310-IFI/84 dated 11 April 1984.

3 Operational Suitability Data Certification Basis

3.1 Master Minimum Equipment List Data (MMEL)

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft.
The "Basic Equipment Checklist", "Chart A", lists all required and optional approved equipment and is included in the weight and balance report delivered with each aircraft (See Note 1).
The CTA approved Flight Manual must be on board.

4. Environmental Protection Requirements

4.1. Noise

RBHA 36 - Noise Standard - Type Certification - corresponding to FAR Part 36 of Federal Aviation Administration, including amendment 36-1 through 36-12 effective 01 August 1981, applicable to EMB-120 and EMB-12RT models.
RBHA 36 - Noise Standard - Type Certification - corresponding to FAR Part 36 of Federal Aviation Administration, including amendment 36-1 through 36-

18 effective 18 August 1990, applicable to EMB-120ER model.

III. Technical Characteristics and Operational Limitations

1. Description

It is an all-metal, pressurized, low-wing, T-tail, monoplane airplane.
Fully retractable, tricycle-type landing gear with dual wheels, anti-skid braking system, and steerable nose gear are utilized. Power is provided by two turboprop,axial-flow. Fuel is stored in two integral wing tanks. As an option, the airplane may be provided with an auxiliary power unit (APU)

2. Dimensions

Lenght:	20.00m
Span:	19.78 m
Height:	6.35 m
Wing Area:	39.43 m²

3. Fluid Capacities

3.1. Fuel Capacity

Total: 3 340 liters (2 tanks of 1.670 liters at +8 860 mm).
Unusable fuel: 28 liters (14 liters each tank)

3.2. Oil Capacity

Total: 56.7 liters (28.8 liters in each nacelle) at +6 916 mm. Unusable oil: 8.0 liters (4.0 liters each nacelle).

4. Datum

Perpendicular plane to the fuselage center line, located 9 307 mm forward of the 66 % chord line (frame 28). This 66 % chord line is 17 mm aft the rear jacking points.

5. Mean Aerodynamic Chord (MAC)

2 000 mm. The MAC leading edge is located 7 987 mm aft of datum.

6. Levelling Means

Plumb line from the upper part of the fuselage frame 28 using a mark in the lower part of the same frame as a reference.

7. Minimum Flight Crew

2 (pilot and copilot) for all flight conditions.

8. Maximum Seating Capacity

Maximum Passengers: 30

9. Baggage/ Cargo Compartment

Maximum Baggage: 550 kg (see Note 7).

10. Wheels and Tyres

	Main Landing Gear	Nose Landing Gear
Wheel	304.8 mm	203.2 mm
Tire Size	609.6 mm x 184.15 mm	457.2 mm x 139.7 mm
Tire Pressure	115 +- 5 psi	75+-5 psi
Shock absorber stroke	300 mm	280mm

11. ETOPS

Not Applicable

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)

Airplanes must be operated according to the ANAC approved AFM ref. AFM-120/813 revision original (or later approved revision).

2. Instructions for Continued Airworthiness and Airworthiness Limitations

All life limitations are provided in Section 6 – Airworthiness Limitation of the MRB H.1-200 document.
Structure and system maintenance requirements, made mandatory as a consequence of the failure and damage tolerance analyses (ALI and CMR), are listed in the Section 6, "Airworthiness

Limitations", of the document MRB No. H.1-200.
All Embraer Service Bulletins issued by Embraer are approved by CTA. Each Service Bulletin carries a statement to that effect.
The structural Repair Manual P/N 120/632 and its revisions are approved and controlled by CTA.

3. Weight and Balance Manual (WBM)

Current weight and balance report including list of equipment included in certified empty weight and loading instructions (if necessary) must be provided for each aircraft at the time of original certification.The certified empty weight and corresponding center of gravity location must include the total engine oil (57.6 liters at + 6 916 mm), hydraulic fluid and unusable fuel (28 liters at +8 860 mm).For loading procedures, the AFM weight and balance Appendix 1 must be followed.

V. Notes

NOTE 1 Markings and placards. All placards required by the applicable operation and certification requirements (see Certification Basis) must be installed in the appropriate airplane locations (see AMM, chapter 11).
All cargo configuration required markings and placards are listed in the Embraer Service Bulletin No. 120-25-0245.

NOTE 2 The maximum operating altitude is limited according to the following table, valid for S/N 120012 and up and previous S/N that incorporated the Service Bulletin 120-073-0003.

both bleed-air open	one bleed-air closed	EEC
9 750 m (32 000 ft)	7 620 m (25 000 ft)	ON
7 620 m (25 000 ft)	6 100 m (20 000 ft)	OFF

For other serial numbers the following values are valid:
- with both bleed-air: 7 620 m (25 000 ft); and
- with one bleed-air: 6 100 m (20 000 ft).

NOTE 3 The aircraft S/N 120004 and 120006 up to 120021 have been converted to the model EMB-120RT by the accomplishment of the Embraer Service Bulletin Nº 120-072-0001.

NOTE 4 The engine Pratt & Whitney PW-118A may be installed by the accomplishment of the Embraer Service Bulletin No. 120-072-0002.

NOTE 5 The baggage compartment maximum capacity may be increased to 700 kg by the accomplishment of the Embraer Engineering Order No. 120-208046.

NOTE 6 All EMB-120RT serial numbers may be converted into the model EMB-120ER by the accomplishment of Embraer Service Bulletin No. 120-00-0008.

NOTE 7 All EMB-120ER serial numbers may be converted into the model EMB-120FC by the accomplishment of Embraer Service Bulletin No. 120-25-0245.

NOTE 8 The airplanes incorporating the Embraer Service Bulletin No. 120-25-0220 comply with RBHA/FAR 25.811(e)(2)(ii) Amdt. 25-79 instead of the 25.811(e)(3) Amdt. 25-54.

NOTE 9 When modified by the Embraer Service Bulletin No. 120-027-0047, the approved elevator tab deflections are 15.5° ± 0.5° up and 19.8° ± 2° down.

NOTE 10 All EMB-120ER serial numbers may be converted into the model EMB-120QC by the accomplishment of Embraer Service Bulletins No. 120-25-0244 and 120-25-0243.

NOTE 11 All EMB-120QC operating cargo must comply with Embraer Service Bulletins nº 120-25-0252 and 120-25-0253.

NOTE 12 The type certificate holder has changed its commercial name. All the ANAC documentation issued to the previous name up to this date remains valid. All documentation issued previously bearing the previous name continues valid.

SECTION 2: MODEL EMB-120 "BRASILIA" DESIGNATION

I. General

1. Model

EMB-120 "BRASILIA"

2. State of Design Authority Certification Application Date

10 October 1979

3. EASA Type Certification Application Date

10 October 1979

4. State of Design Authority Type Certificate Date

13 May 1985

5. EASA Type Certification Date

13 May 1985

II. Certification Basis

1. Reference Date for determining the Applicable Certification Basis

10 October 1979

1.1. State of Design Airworthiness Authority Type Certification Data Sheet No.EA-8505-10

III. Technical Characteristics and Operational Limitations

1. Engines

2 Pratt & Whitney of Canada Ltd. PW-115

1.1. Engine Limits

Operation Condition	Operational Limits						
	SHP	Torque % (lb.ft)	T6 °C	NH %	NP %	Oil Pressure psid	Oil Temp. °C *9
Takeoff Max. Cont.	1 600	100.0 *7 (6 464)	785	100.0	100.0 *6	55 to 65	45 to 100
Ground				62.0 min.	65.0 *10 min.	40*3 min.	-40 min. to 100 *1
Starting			850 *5 950 *2				-40 min
Transient		125 *5	850 *5	102.0 *5	110.0 *5		100 to 115 *4
Max. Reverse				100.0	80.0 *8	55 to 65	45 to 100
Max. Climb Max. Cruise	1 504	94.0 (6 076)	785	100.0	100.0 *6	55 to 100	45 to 100

Obs: NL indication: a warning light illuminates when the gas generator low pressure exceeds the speed range of 25 to 100 %.

ENGINE LIMITS (Cont.)

*1 A minimum oil temperature of 0°C is necessary for power above "ground idle".
*2 This value is limited to 5 sec.
*3 The normal oil pressure is 55 to 65 psid with NH rotation over 75 %. A minimum pressure of 40 psid is acceptable between 62 to 75 % of NH.
*4 Oil temperature between 100 to 115°C is an abnormal condition and is limited to 15 min.
*5 This value is limited to 20 sec.
*6 Tolerance of the maximum NP value is 100.0 to 100.7 %.
*7 Torque values up to 110.0 % are acceptable for take-off.
*8 Must remain stationary after the reverse setting.
*9 The oil temperature must be maintained above 45°C to assure engine air intake deicing and avoid ice fuel formation.

*10 During all ground operations the condition levers must be at MIN RPM position, except for takeoff and landing rolls.
During all ground operations the power levers must be at or below FLIGHT IDLE, except for short time periods (5 sec) for aircraft ground handling.
Caution: Ground operations above FLIGHT IDLE increase propeller blade stresses significantly in some adverse wind directions (for instance cross and tail winds). Operations in this RPM range should be avoided as much as possible. (See Flight Manual)

2. Propellers

2 Hamilton Sundstrand 14RF-9, blades RFC11N1-6A, RFC11M1-6A, RFC11E1-6A, RFC11U1-6A and RFC11AA1-6A.

2.1. Propeller Limits

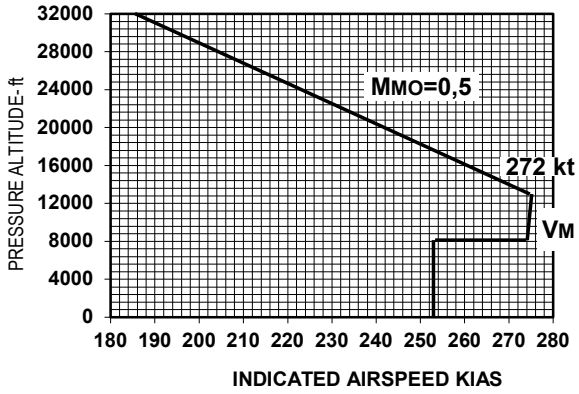
Maximum speed (100.0 % NP):	1 300 rpm
Diameter:	3 200 mm
Pitch settings (at STA 1 067 mm):	79.2° to -15°
Number of blades:	4

3. Fuel

Brazilian Specification CNP-08/QAV1 and QAV4.
Pratt & Whitney Specification CPW 204.
ASTM Specification D1655 - JET A, JET A-1, JET B*.
MIL-T-5624 Specification - JP-4*, JP-5.
Aviation Fuel - See Flight Manual for limitations.
*JET B or JP-4 fuel should only be used when no other fuel is available.

4. Airspeed Limits

Maximum operating (Vmo):



AIRSPEED LIMITS (IAS) (Cont.)	Maneuvering (V_A) - sea level:	370 km/h (200 kias)
	Flaps extended (V_{FE})	
	- 15° (takeoff):	370 km/h (200 kias)
	- 25° (approach):	278 km/h (150 kias)
	- 45° (landing):	250 km/h (135 kias)
	L. G. operation (V_{LO}):	370 km/h (200 kias)
	L. G. extended (V_{LE}):	370 km/h (200 kias)

5. Flight Envelope

The flight envelope (V-n diagram) is defined in accordance with paragraphs 25.333, 25.335, 25.337, 25.341 and 25.345 of FAR Part 25.

DESIGN WEIGHT	FLAP POSITION	MANOEUVER		GUST(*)	
		nmax	nmin	nmax	nmin
11500 Kg	Retracted	2,78	-1,00	3,32	-1,32
	Take-off /15°	2,00	0	-	-
	Landing	2,00	0	-	-
6500 Kg	Retracted	2,78	-1,00	4,71	-2,71
	Take-off /15°	2,00	0	2,50	-0,50
	Landing	2,00	0	2,08	-0,08

(*) Evaluated for discrete gust at airplane C.G.
Flaps are not used in en route conditions.

6. Operating Limitations

Maximum Operating Altitude 9 750 m (32 000 ft). See Note 4.

7. Maximum Certified Masses

Ramp: 11 580 kg
Take-off: 11 500 kg
Landing: 11 250 kg
Zero fuel: 10 900 kg

8. Centre of Gravity Range
(landing gear extended)

For ground conditions, landing and take-off:
- 8 407 to 8 827 mm (21 % to 42 % MAC) with 11 580 kg
- 8 407 to 8 827 mm (21 % to 42 % MAC) with 11 500 kg
- 8 107 to 8 827 mm (6 % to 42 % MAC) with 8 300 kg
- 8 107 to 8 827 mm (6 % to 42 % MAC) with 7 200 kg
- 8 107 mm (6 % MAC) with 6 500 kg

For flight conditions:
- 8 377 to 8 857 mm (19.5 % to 43.5 % MAC) with 11 500 kg
- 8 255 to 8 867 mm (13.4 % to 44 % MAC) with 10 300 kg
- 8 067 to 8 867 mm (4 % to 44 % MAC) with 8 300 kg

- 8 067 to 8 867 mm (4 % to 44 % MAC) with 7 200 kg
- 8 067 mm (4 % MAC) with 6 500 kg
Straight line variation between points given.
Moment due to landing gear retraction: -257 000 kg x mm (the aircraft CG is moved forward with retraction).

SECTION 3: MODEL EMB-120RT "BRASILIA" DESIGNATION

I. General

1. Model

EMB-120RT "BRASILIA"

2. State of Design Authority Certification Application Date

22 July 1986

3. EASA Type Certification Application Date

22 July 1986

4. State of Design Authority Type Certificate Date

26 August 1986

5. EASA Type Certification Date

26 August 1986

II. Certification Basis

1. Reference Date for determining the Applicable Certification Basis

22 July 1986

1.1. State of Design Airworthiness Authority Type Certification Data Sheet No.EA-8505-10

III. Technical Characteristics and Operational Limitations

1. Engines

2 Pratt & Whitney of Canada Ltd. PW-118; or 2 Pratt & Whitney of Canada Ltd. PW-118A (See Note 6); or 2 Pratt & Whitney of Canada Ltd. PW-118B.

1.1. Engine Limits
Engine limits related to PW-118:

Operation Condition	Operational Limits							
	NL %	SHP	Torque % (lb.ft)	T6 °C	NH %	NP %	Oil Pressure psid	Oil Temp. °C *9
Takeoff Max. Cont.	100.0	1 800	100.0 *7 (7 272)	800	100.0	100.0 *6	55 to 65	45 to 100
Ground					62.0	65.0 *10	40*3	-40 to 100 *1
Starting				850 *5 950 *2				-40
Transient	103.0 *5		120 *5 (8 726)	850 *5	102.0 *5	110.0 *5		100 to 115*4
Max. Reverse				785		80.0 *8	55 to 65	45 to 100
Max. Climb Max. Cruise	100.0	1 512	84.0 (6 108)	800	100.0	100.0 *6	55 to 65	45 to 100

Obs: NL indication: a warning light illuminates when the gas generator low pressure exceeds the speed range of 25 to 100 %.

*1 A minimum oil temperature of 0°C is necessary for power above "ground idle".

*2 This value is limited to 5 sec.

*3 The normal oil pressure is 55 to 65 psid with NH rotation over 75 %. A minimum pressure of 40 psid is acceptable between 62 to 75 % of NH.

*4 Oil temperature between 100 to 115°C is an abnormal condition and is limited to 15 min.

*5 This value is limited to 20 sec.

*6 Tolerance of the maximum NP value is 100.0 to 100.7 %.

*7 Torque values up to 110.0 % are acceptable for take-off.

*8 Must remain stationary after the reverse setting.

*9 The oil temperature must be maintained above 45 °C to assure engine air intake deicing and avoid ice fuel formation.

*10 During all ground operations the condition levers must be at MIN RPM position, except for takeoff and landing rolls.

During all ground operations the power levers must be at or below FLIGHT IDLE, except for short time periods (5 sec) for aircraft ground handling.

Caution: Ground operations above FLIGHT IDLE increase propeller blade stresses significantly in some adverse wind directions (for instance cross and tail winds). Operations in this RPM range should be avoided as much as possible. (See Flight Manual)

2. Propellers

2 Hamilton Sundstrand 14RF-9, blades RFC11N1-6A, RFC11M1-6A, RFC11E1-6A, RFC11U1-6A and RFC11AA1-6A.

2.1. Propeller Limits

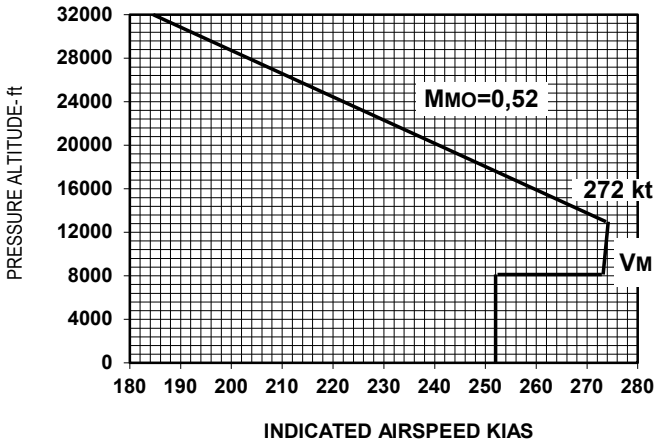
Maximum speed (100.0 % NP):	1 300 rpm
Diameter:	3 200 mm
Pitch settings (at STA 1 067 mm):	79.2° to -15°
Number of blades:	4

3. Fuel

Brazilian Specification CNP-08/QAV1 and QAV4.
Pratt & Whitney Specification CPW 204.
ASTM Specification D1655 - JET A, JET A-1, JET B*.
MIL-T-5624 - JP-4*, JP-5.
Aviation Fuel - See Flight Manual for limitations.
*JET B or JP-4 fuel should only be used when no other fuel is available.

4. Airspeed Limits

Maximum operating (Vmo):



AIRSPEED LIMITS (IAS) (Cont.)	Maneuvering (V_A) - sea level:	370 km/h (200 kias)
	Flaps extended (V_{FE})	
	- 15° (takeoff):	370 km/h (200 kias)
	- 25° (approach):	278 km/h (150 kias)
	- 45° (landing):	250 km/h (135 kias)
	L. G. operation (V_{LO}):	370 km/h (200 kias)
	L. G. extended (V_{LE}):	370 km/h (200 kias)

5. Flight Envelope

The flight envelope (V-n diagram) is defined in accordance with paragraphs 25.333, 25.335, 25.337, 25.341 and 25.345 of FAR Part 25.

DESIGN WEIGHT	FLAP POSITION	MANOEUVER		GUST(*)	
		nmax	nmin	nmax	nmin
11500 Kg	Retracted	2,78	-1,00	3,32	-1,32
	Take-off /15°	2,00	0	-	-
	Landing	2,00	0	-	-
6500 Kg	Retracted	2,78	-1,00	4,71	-2,71
	Take-off /15°	2,00	0	2,50	-0,50
	Landing	2,00	0	2,08	-0,08

(*) Evaluated for discrete gust at airplane C.G.
Flaps are not used in en route conditions.

6. Operating Limitations

Maximum Operating Altitude 9 750 m (32 000 ft). See Note 4.

7. Maximum Certified Masses

Ramp Weight: 11 580 kg
Take-off Weight: 11 500 kg
Landing Weight: 11 250 kg
Zero fuel Weight: 10 900 kg

8. Centre of Gravity Range
(landing gear extended)

For ground conditions, landing and take-off:
- 8 407 to 8 827 mm (21 % to 42 % MAC) with 11 580 kg
- 8 407 to 8 827 mm (21 % to 42 % MAC) with 11 500 kg
- 8 107 to 8 827 mm (6 % to 42 % MAC) with 8 300 kg
- 8 107 to 8 827 mm (6 % to 42 % MAC) with 7 200 kg
- 8 107 mm (6 % MAC) with 6 500 kg

For flight conditions:
- 8 377 to 8 857 mm (19.5 % to 43.5 % MAC) with 11 500 kg
- 8 255 to 8 867 mm (13.4 % to 44 % MAC) with 10 300 kg
- 8 067 to 8 867 mm (4 % to 44 % MAC) with 8 300 kg
- 8 067 to 8 867 mm (4 % to 44 % MAC) with 7 200 kg
- 8 067 mm (4 % MAC) with 6 500 kg

Straight line variation between points given.
Moment due to landing gear retraction: -257 000 kg x mm (the aircraft CG is moved forward with retraction).

SECTION 4: MODEL EMB-120ER "BRASILIA" DESIGNATION

I. General

1. Model

EMB-120ER "BRASILIA"

2. State of Design Authority Certification Application Date

16 April 1991

3. EASA Type Certification Application Date

16 April 1991

4. State of Design Authority Type Certificate Date

07 February 1992

5. EASA Type Certification Date

07 February 1992

II. Certification Basis

1. Reference Date for determining the Applicable Certification Basis

16 April 1991

1.1. State of Design Airworthiness Authority Type Certification Data Sheet No.

EA-8505-10

III. Technical Characteristics and Operational Limitations

1. Engines

2 Pratt & Whitney of Canada Ltd. PW-118; or 2 Pratt & Whitney of Canada Ltd. PW-118A (See Note 6); or 2 Pratt & Whitney of Canada Ltd. PW-118B.

1.1. Engine Limits

Engine limits related to PW-118:

	Operational Limits

Operation Condition	NL %	SHP	Torque % (lb.ft)	T6 °C	NH %	NP %	Oil Pressure psid	Oil Temp. °C *9
Takeoff Max. Cont.	100.0	1 800	100.0 *7 (7 272)	800	100.0	100.0 *6	55 to 65	45 to 100
Ground					62.0	65.0 *10	40*3	-40 to 100 *1
Starting				850 *5 950 *2				-40
Transient	103.0 *5		120 *5 (8 726)	850 *5	102.0 *5	110.0 *5		100 to 115*4
Max. Reverse				785		80.0 *8	55 to 65	45 to 100
Max. Climb Max. Cruise	100.0	1 512	84.0 (6 108)	800	100.0	100.0 *6	55 to 65	45 to 100

Obs: NL indication: a warning light illuminates when the gas generator low pressure exceeds th espeed range of 25 to 100 %.

*1 A minimum oil temperature of 0°C is necessary for power above "ground idle".

*2 This value is limited to 5 sec.

*3 The normal oil pressure is 55 to 65 psid with NH rotation over 75 %. A minimum pressure of 40 psid is acceptable between 62 to 75 % of NH.

*4 Oil temperature between 100 to 115°C is an abnormal condition and is limited to 15 min.

*5 This value is limited to 20 sec.

*6 Tolerance of the maximum NP value is 100.0 to 100.7 %.

*7 Torque values up to 110.0 % are acceptable for take-off.

*8 Must remain stationary after the reverse setting.

*9 The oil temperature must be maintained above 45°C to assure engine air intake deicing and avoid ice fuel formation.

*10 During all ground operations the condition levers must be at MIN RPM position, except for takeoff and landing rolls.

During all ground operations the power levers must be at or below FLIGHT IDLE, except for short time periods (5 sec) for aircraft ground handling.

Caution: Ground operations above FLIGHT IDLE increase propeller blade stresses significantly in some adverse wind directions (for instance cross and tail winds). Operations in this RPM range should be avoided as much as possible. (See Flight Manual)

2. Propellers

2 Hamilton Sundstrand 14RF-9, blades RFC11N1-6A, RFC11M1-6A, RFC11E1-6A, RFC11U1-6A and RFC11AA1-6A.

2.1. Propeller Limits

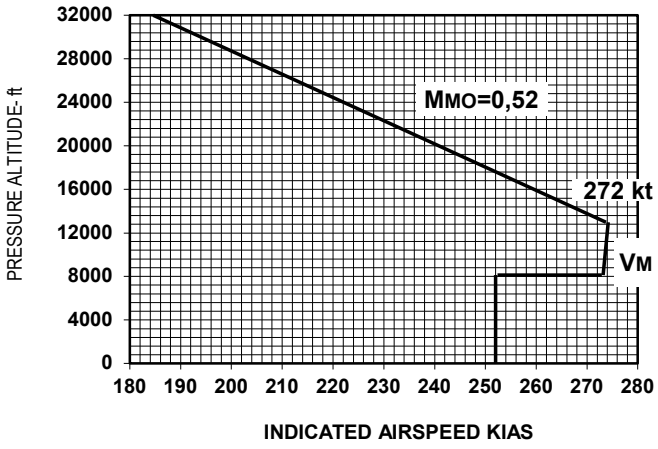
Maximum speed	
(100.0 % NP):	1 300 rpm
Diameter:	3 200 mm
Pitch settings	
(at STA 1 067 mm):	79.2° to -15°
Number of blades:	4

3. Fuel

Brazilian Specification CNP-08/QAV1 and QAV4.
Pratt & Whitney Specification CPW 204.
ASTM Specification D1655 - JET A, JET A-1, JET B*.
MIL-T-5624 - JP-4*, JP-5.
Aviation Fuel - See Flight Manual for limitations.
*JET B or JP-4 fuel should only be used when no other fuel is available.

4. Airspeed Limits

Maximum operating (Vmo):



AIRSPEED LIMITS (IAS)

(Cont.)

Maneuvering (V_A) - sea level:	370 km/h (200 kias)
Flaps extended (V_{FE})	
- 15° (takeoff):	370 km/h (200 kias)
- 25° (approach):	278 km/h (150 kias)
- 45° (landing):	250 km/h (135 kias)
L. G. operation (V_{LO}):	370 km/h (200 kias)
L. G. extended (V_{LE}):	370 km/h (200 kias)

5. Flight Envelope

The flight envelope (V-n diagram) is defined in accordance with paragraphs 25.333, 25.335, 25.337, 25.341 and 25.345 of FAR Part 25.

DESIGN WEIGHT	FLAP POSITION	MANOEUVER		GUST(*)	
		nmax	nmin	nmax	nmin
12000 Kg	Retracted	2,76	-1,00	3,05	-1,06
	Take-off /15°	2,00	0	-	-
	Landing	2,00	0	-	-
6500 Kg	Retracted	2,76	-1,00	4,40	-2,47
	Take-off /15°	2,00	0	2,46	-0,47
	Landing	2,00	0	1,99	-0,19

(*) Evaluated for discrete gust at airplane C.G.

6. Operating Limitations

Maximum Operating Altitude 9 750 m (32 000 ft). See Note 4.

7. Maximum Certified Masses

Ramp Weight: 12 070 kg
Take-off Weight: 11 990 kg
Landing Weight: 11 700 kg
Zero fuel Weight: 10 900 kg

8. Centre of Gravity Range
(landing gear extended)

For ground conditions, landing and take-off:
- 8 407 to 8 827 mm (21 % to 42 % MAC) with 11 580 kg
- 8 407 to 8 827 mm (21 % to 42 % MAC) with 11 500 kg
- 8 107 to 8 827 mm (6 % to 42 % MAC) with 8 300 kg
- 8 107 to 8 827 mm (6 % to 42 % MAC) with 7 200 kg
- 8 107 mm (6 % MAC) with 6 500 kg

For flight conditions:
- 8 377 to 8 857 mm (19.5 % to 43.5 % MAC) with 11 500 kg
- 8 255 to 8 867 mm (13.4 % to 44 % MAC) with 10 300 kg
- 8 067 to 8 867 mm (4 % to 44 % MAC) with 8 300 kg
- 8 067 to 8 867 mm (4 % to 44 % MAC) with 7 200 kg
- 8 067 mm (4 % MAC) with 6 500 kg

Straight line variation between points given.
Moment due to landing gear retraction: -257 000 kg x mm (the aircraft CG is moved forward with retraction).

SECTION 5: ADMINISTRATIVE

I. Type Certificate Holder Record

Yaborã Indústria Aeronáutica S.A. transferred TC 8505 to Embraer S.A on January 1, 2022.

Embraer S.A transferred TC 8505 to Yaborã Indústria Aeronáutica S.A. on January 31, 2020.

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

II. Change Record

Issue	Date	Changes	TC issue
Issue 01	03 May 2021	Initial Issue	Initial Issue, 31 January 2020
Issue 02	31. Jan 2022	- TC Holder Transfer Update - Change Field Manufacturer to TC Holder	

--End of TCDS IM.A.188--