



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

TYPE CERTIFICATE DATA SHEET Nº EA-2006T08

Type Certificate Holder:

BOMBARDIER INC.
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Downsview, Ontario
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CANADA

EA-2006T08-01
Sheet 01

BOMBARDIER

BD-700-1A10
BD-700-1A11

05 October 2009

This data sheet, which is part of Type Certificate No. 2006T08, prescribes conditions and limitations under which the product, for which the Type Certificate was issued, meets the airworthiness requirements of the Brazilian Aeronautical Regulations.

I - Model BD-700-1A10 Global Express (Transport Category), approved on 18 December 2006.

ENGINE

Two Rolls Royce Deutschland Ltd & Co KG BR700-710A2-20.

FUEL

Specification ASTM D1655 types Jet-A and Jet A-1; specification ASTM D1655-JETB type Jet-B; specification MIL-T83133 type JP-8; specification MIL-T-5624 type JP-5; specification MIL-T-5624-JP4 type JP-4. Fuel additives restricted to those listed in Brazilian Aircraft Flight Manual (AFM), corresponding Bombardier Publication CSP 700-1 and CSP 700-1A (Limitation, Fuel Additives).

ENGINE LIMITS

Sea level static thrust, kg (lb):

Max. Take-off (5 min) 6693.87 (14757.47)

Maximum continuous 6561.22 (14465.02)

Rotor speed rpm (%):

- Maximum N1 102.0

- Minimum N2 99.6

Flat rating ambient temperature °C (°F):

Max. Take-off 900 (1652)

Maximum continuous 860 (1580)

Maximum permissible oil outlet temperatures °C (°F)

Continuous operation 160 (320)

Fuel pressure limits: 5 psi min.

Oil pressure limit at idle: 45 psi min.

For others engine limitations see Engine TCDS EM-2004T04-01.

APU LIMITS

Maximum RPM (%): 106
 Maximum EGT °C (°F): Starting: 657-1020 (1215-1868)
 Running: 594-714 (1101-1317)

OIL

Engine, APU: Refer to Aircraft Maintenance Manual, Bombardier Publication BD 700 AMM, Chapter 51.

CG RANGE

(Landing gear extended)
 (Empty weight)

See the appropriated CG envelope in Brazilian Airplane Flight Manual (AFM) approved by the Transport Canada on behalf of the ANAC, corresponding Bombardier Publication CSP 700-1 or CSP 700-1A for appropriate configuration and approved revision.

DATUM

FS 0.0 located at 366 cm (1.44 in) forward of the aircraft nose.

MEAN AERODYNAMIC CHORD

153.6 in (3.9 m) (MAC leading edge at fuselage station 676.87 in)

MAXIMUM WEIGHT

Takeoff kg (lb): 42 411 (93 500) or
 43 091 (95 000)* or
 43 545 (96 000)** or
 44 452 (98 000)***
 Landing kg (lb): 35 652 (78 600)
 Zero Fuel kg (lb) : 25 401 (56 000)
 Ramp kg (lb): 42 524 (93 750) or
 43 205 (95 250) * or
 43 658 (96 250) ** or
 44 565 (98 250) ***

* Refers to aircraft which incorporate Bombardier Service Bulletin SB 700-11-007

** Refers to aircraft which incorporate Bombardier Service Bulletin SB 700-11-011

*** Refers to aircraft which incorporate Bombardier Service Bulletin SB 700-11-016 (or Modsum 700T804402)

FUEL CAPACITY**FUEL TANKS CAPACITY – litre (kg)****

	2 main tank (each)	1 center tank	1 aft tank	Total
Max.	8 415 (6 805)	6 227 (5 036)	1 276 (1 032)	24 333 (19 678)
Unusable *	114 (92)			
Undrainable*	56.0 (45.4)			

For aircraft incorporating Bombardier Service Bulletin 700-28-029 (or Modsum 700T01614)

	2 main tank (each)	1 center tank	1 aft tank	Total
Max.	8 435 (6 824)	6 265 (5 068)	1 276 (1 032)	24 416 (19 753)
Unusable *	38.6 (31.2)			
Undrainable*	56.0 (45.4)			

FUEL CAPACITY (Cont.)

For aircraft incorporating Bombardier Service Bulletin 700-28-040 (or Modsum 700T804402)				
	2 main tank (each)	1 center tank	1 aft tank	Total
Max.	8 435 (6 824)	7 111 (5 753)	1 276 (1 032)	25 256 (20 433)
Unusable *	40.1 (32.4)			
Undrainable*	56.0 (45.4)			
*See Note 6				
** Assuming a fuel density of 6.75lbs/ U.S.Gal				

HYDRAULIC FLUID CAPACITY

1830 cu in.

WING ANTI-ICE FLUID

SAE Type I, II, III, IV.

TEMPERATURE OPERATING LIMITS

Maximum: 50 °C (122 °F)

Minimum: -30 °C (-22 °F)

CONTROL SURFACE MOVEMENTS

Elevator:	24° TE Up	19° TE Down
Horizontal Stabilizer	2° LE Up	12° LE Down
Rudder:	37° Right	37° Left
Aileron:	26.5° TE Up	23° TE Down
Ground spoilers	45° UP	-
Multi-function spoilers (Inboard to Outboard)	40/40/46/46° UP	-

SERIAL NUMBER ELIGIBLE

9002 and subsequent.

A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.

II- Model BD-700-1A11 Global 5000 (Transport Category), approved on 18 December 2006.**ENGINE**

Two Rolls Royce Deutschland Ltd & Co KG BR700-710A2-20.

FUEL

Specification ASTM D1655 types Jet-A and Jet A-1; specification ASTM D1655-JETB type Jet-B; specification MIL-T83133 type JP-8; specification MIL-T-5624 type JP-5; specification MIL-T-5624-JP4 type JP-4. Fuel additives restricted to those listed in Brazilian Aircraft Flight Manual (AFM), corresponding Bombardier Publication CSP 700-5000-1 (Limitation, Fuel Additives)

ENGINE LIMITS

Sea level static thrust, kg (lb):

Max. Take-off (5 min) 6 693.87 (14 757.47)

Maximum continuous 6 561.22 (14 465.02)

Rotor speed rpm (%):

- Maximum N1 102.0

- Minimum N2 99.6

ENGINE LIMITS (Cont.)

Flat rating ambient temperature °C (°F):

Max. Take-off 900 (1652)

Maximum continuous 860 (1580)

For others engine limitations see Engine TCDS EM-2004T04-01.

Maximum permissible oil outlet temperatures °C (°F)

Continuous operation 160 (320)

Transient operation 160 (320)

Fuel pressure limits: 5 psi min.

Oil pressure limit at idle: 45 psi min.

For others engine limitations see Engine TCDS EM-2004T04-01.

APU LIMITS

Maximum RPM (%): 106

Maximum EGT °C (°F): Starting: 657-1020 (1215-1868)

Running: 594-714 (1101-1317)

OIL

Engine, APU: Refer to Aircraft Maintenance manual, Bombardier Publication BD 700-1A11 AMM, Chapter 51.

CG RANGE(Landing gear extended)
(Empty weight)

See the appropriated CG envelope in Brazilian Airplane Flight Manual (AFM), approved by the Transport Canada on behalf of the ANAC , corresponding Bombardier Publication CSP 700-5000-1

DATUM

FS 0.0 located at 366 cm + 81 cm (1.44 in. + 32 in) forward of the aircraft nose.

MEAN AERODYNAMIC CHORD

153.6 in (3.9 m) (MAC leading edge at fuselage station 676.87 in).

MAXIMUM WEIGHT

Takeoff kg (lb): 39 780 (87 700) or

40 687 (89 700) *

Landing kg (lb): 35 652 (78 600)

Zero Fuel kg (lb) : 25 401 (56 000)

Ramp kg (lb): 39 893 (87 950) or

40 801 (89 950)*

* Refers to aircraft which incorporate Bombardier Service Bulletin SB 700-1A11-11-002

FUEL CAPACITY

FUEL TANKS CAPACITY – litre (kg)**

	2 main tank (each)	1 center tank	Total
Max.	8 435 (6 824)	3 418 (2 765)	20 288 (16 413)
Unusable *	37.9 (30.6)		
Undrainable*	56.0 (45.4)		
*See Note 6			
** Assuming a fuel density of 6.75lbs/ U.S.Gal			

HYDRAULIC FLUID CAPACITY

1830 cu in.

WING ANTI-ICE FLUID

SAE Type I, II, III, IV.

TEMPERATURE OPERATING LIMITS

Maximum: 50 °C (122 °F)
 Minimum: -30 °C (-22 °F)

CONTROL SURFACE MOVEMENTS

Elevator:	24° TE Up	19° TE Down
Horizontal Stabilizer	2° LE Up	12° LE Down
Rudder:	37° Right	37° Left
Aileron:	26.5° TE Up	23° TE Down
Ground spoilers	45° UP	-
Multi-function spoilers (Inboard to Outboard)	40/40/46/46° UP	-

SERIAL NUMBER ELIGIBLE

9127 and subsequent.
 A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.

DATA PERTINENT TO ALL MODELS:**APU**

Allied Signal RE 220 (GX).

AIRSPPEED LIMITS (IAS)

	km/h (knots)	Mach
Maximum operating (V_{MO} and M_{MO}):	-	-
Sea Level to 8000ft	555 (300)	-
8000ft to 30267 ft	629 (340)	0.89
Maneuvering (V_A) - sea level:	See AFM approved	
Flaps extended (V_{FE})		
6°	388 (210)	-
16°	388 (210)	-
30°	342 (185)	-
Minimum control speed - Air (V_{MCA}):	159 (86)	-
Minimum control speed - Ground (V_{MCG}) (CAS):	155 (84)	-
L. G. operation - (V_{LO}):	370 (200)	-
L. G. extended (V_{LE}):	462 (250)	-

MAXIMUM OPERATING ALTITUDE 15 545 m (51 000 ft)

MAXIMUM ALTITUDE – TAKE OFF AND LANDING 4 175 m (13 700 ft)

LEVELING MEANS

Aircraft is levelled in the longitudinal and lateral axis by means of a plumb bob and target in the aft equipment bay at FS 926.

MINIMUM CREW

Two (pilot and co-pilot)

MAXIMUM PASSENGERS

22 (including the crew and no more than 19 passengers).
 (See Note 5)

MAXIMUM BAGGAGE

The green aircraft does not include baggage / cargo compartments.

OIL CAPACITY

2 engines (each) litres (kg)*	18.2 (18)
1 oil Repl. Tank (including oil repl. lines)	6.1 (6)
Total	42.5 (42)
Usable per engine	3.83 (3.7)
* Assuming an oil density of 8.1073lbs/U.S. Gal	

IMPORT ELIGIBILITY

A Brazilian Certificate of Airworthiness may be issued on the basis of the TCCA Export Certificate on Airworthiness (or a third country Export Certificate on Airworthiness, in case of used aircraft imported from such country), including the following statement:

“The aircraft covered by this certificate has been inspected, tested and found to be in conformity with the Brazilian approved type design as defined by the Brazilian Type Certificate no. 2006T08 and in condition of safe operation”.

The ANAC Report **H.10-2220-03, dated 28 September 2009** or further revisions, contains the Brazilian requirements for the acceptance of these airplanes. (See note 4)

CERTIFICATION BASIS

Brazilian Type Certificate No. 2006T08 issued on 18 Dec. 2006 based on the RBHA 25, “Requisitos de Aeronavegabilidade para Aviões Categoria Transporte”, which endorses the 14 CFR Part 25 effective 01 February 1965, including amendments 25-1 through 25-91, amendment 25-94, Amendments 25-96 and Amendments 25-97.

Special Conditions:

- TCCA SCA 94-11 High Intensity Radiated Fields (HIRF) (Issue Paper G-2);
- TCCA SCA 2000-06 Instalation of a Single Head-Up Display (HUD) System; and
- TCCA SCA 2003-03 Enhanced Vision System (EVS).

Equivalent levels of safety findings:

- RBHA/14 CFR 25.109 Reject Take off and Landing Performance Criteria (TCCA Issue Paper F-2);
- RBHA/14 CFR 25.933 Thrust reversers (TCCA Issue Paper E-6); and
- RBHA/14 CFR 25.1435(b)(1) Hydraulic System Proof Pressure Testing (TCCA Issue Paper E-13).

Additional ANAC equivalent levels of safety to the applicable requirements, to be processed in accordance with the provisions of RBHA 21.21(b)(1):

Propulsion:

- Auxiliary Power Unit (APU) Instrumentation and Monitoring Requirements (FCAR PR-03); and
- Digital Only Display of Turbine Engine High/Intermediate Pressure Rotor Speed (N2) (FCAR PR-04).

Noise requirements: RBHA 36 corresponding to ICAO Annex 16, Vol. I,

- amendment 5, (1997) for BD 700-1A10, and
- amendment 7, (2002) for BD 700-1A11.

CERTIFICATION BASIS (Cont.)

Compliance has also been demonstrated with 14 CFR Part 36, Noise Standards including:

- amendments 36-1 through 36-21 for BD-700-1A10, and
- amendments 36-1 through 36-24 for BD-700-1A11.

Emission requirements: RBHA 34 corresponding to ICAO Annex 16, Vol. II, Amend 2, (1992) for BD 700-1A10 and BD-700-1A11.

Compliance has also been demonstrated with 14 CFR Part 34, Emission Standards including amendments 34-1 for BD 700-1A10 and BD-700-1A11.

Optional design regulations:

Compliance with ditching structural has been demonstrated in accordance with RBHA/14 CFR 25.801(b) thru (e) (TCCA Issue Paper E-8) and 25.807(i).

Acceptable Means of Compliance:

The following Acceptable Means of Compliance are adopted by ANAC:

Propulsion:

- Uncontrollable high thrust (FCAR PR-02)

Additional Airworthiness Requirements: Selected paragraphs from Canadian Airworthiness Manual, chapter 525 listed in TCCA certification basis (TCCA Issue Paper G1) and endorsed by ANAC:

- 525.201(d)(1) Stall Demonstration, First Edition;
- 525.207(b) Stall Warning, First Edition;
- 525.697(b) Lift and drag Device Controls, First Edition;
- 525.699(d) Lift and drag Device Indicator, First Edition;
- 525.1301-1 Operations after Ground Cold Soak, First Edition;
- 525.1521(e) 10 minutes Rated Takeoff Power, Change 525-3;
- 525.1557(b)(4) Miscellaneous Markings and Placards, Change 525-3;
- 525.1581(g) AFM Operating Procedures (Wet/Contaminated Runways), Change 525-4.

PRODUCTION CERTIFICATION

TCCA No. 12-58.

REQUIRED EQUIPMENT

The basic required equipment, as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane.

NOTES:

NOTE 1 Weight and balance. Current weight and balance report, including the list of equipment that are part of the certificated basic empty weight and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

NOTE 2 Markings and placards. All markings and placards required by the applicable certification requirements (see certification basis) and by the operational requirements must be installed in the appropriate locations.
All required placards in Portuguese are listed on Annex II of the ANAC Acceptance Report H.10-2220-03 or later revisions.

NOTE 3 Continuing Airworthiness. Required structural inspections and the retirement times for safelife parts are listed in the TCCA Approved Airworthiness Limitations Section (Part 2) of Bombardier Document BD 700 Time Limits / Maintenance Checks Manual (Maintenance Planning Data).
Systems and powerplant Certification Maintenance Requirements (CMR) are listed in either the TCCA approved Part 3 of Maintenance Planning Data (Document BD 700 Time Limits / Maintenance Checks Manual) or the applicable engine Type Certificate Data Sheet. The more restrictive from these two documents shall be in force.

NOTE 4 The differences of the Brazilian airplanes in relation to the basic TCCA type design are summarized below:
1. The Brazilian Airplane Flight Manual; and
2. Markings and placards.

NOTE 5 The green aircraft type design configuration 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 the Basis of Certification.

NOTE 6 The amount of fuel required to fill the system plumbing and tanks to the undrainable level plus unusable fuel in the fuel tanks as defined in the Fuel Capacity section must be included in the empty weight.

NOTE 7 The following TCCA Supplemental Type Certificates (STC) owned by Bombardier Inc., applicable to **the BD-700-1A10 (Global Express) and BD-700-1A11 (Global 5000)** models, were validated by ANAC without Corresponding Brazilian CHST documents issuance.

STC No.	DESCRIPTION OF TYPE DESIGN CHANGE	AFMS No.
C-LSA-182/D *(Limited to the S/N 9190)	Aircraft Completion, 13 Passenger Interior Configuration in accordance with Modification Data Summary E952000, Rev. D, or later approved revisions.	G-FM 25000142 Rev. N/C or later TCCA approved revisions.
C-LSA09-156/D *(Limited to the S/N 9312)	Interior Completion S/N 9312, model BD-700-1A10 in accordance with Modification Data Summary G257000, Rev. A, or later approved revisions.	G-FM25000177 Rev. N/C or later TCCA approved revisions.
SA07-117	Installation, Class II Electronic Flight Bag. **	G-FM46204001 Rev. N/C or later TCCA approved revisions.

** Note: Related to the STC # SA07-117, this installation approval does not constitute operational approval for any use of the EFB. This approval is for the EFB system structural mounting and interconnect wiring only.


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