

### **<u>TYPE CERTIFICATE DATA SHEET № ER-8812</u>**

Type Certificate Holder: (See Note 9)

EUROCOPTER Aeroport International Marseille-Provence 13725 Marignane FRANCE ER-8812-11 Sheet 01

EUROCOPTER

AS 350 B1, AS 350 B2, AS 350 BA, AS 350 B3 EC 130 B4

02 March 2009

This data sheet, which is part of Type Certificate No. 8812, 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 AS 350 B1 (Normal Category), approved 08 November 1988.

ENGINE	Turbomeca Arriel 1D (See TCDS nº EM-8012).	
FUEL	Jet A, Jet A-1, Jet B, JP-5 or JP-8. (See RFM for emergency fuels)	
ENGINE LIMITS	Take-off (5 min):* - shaft limit torque: 830 N.m - minimum guaranteed power: 510 kW (684 hp) - gas generator speed: 52 214 rpm (100.8% + 0.4%) - T4: 845°C (See Note 7)	
	Maximum continuous power:* - shaft limit torque: 830 N.m - minimum guaranteed power: 450 kW (603 hp) - gas generator speed: 50 764 rpm (98%) - T4: 795°C (See Note 7)	
	Maximum transient (5 seconds): - gas generator speed: 54 649 rpm (105.5%) - T4: 865°C	
ROTOR LIMITS	Power on: - in the ground with low pitch: 380 ± 5 rpm - in stabilized flight: 390 +4/-5 rpm	
	Power off: - maximum: 430 rpm - minimum: 320 rpm (aural warning at 360 rpm)	
OIL	Refer to Flight Manual.	

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AIRSPEED LIMITS (IAS)	<ul> <li>Never exceed speed (V<sub>NE</sub>): - Power on: 287 km/h (155 kt)* - Power off: 232 km/h (125 kt)**</li> <li>* At sea level. At higher altitudes, subtract 18 km/h (10 kt) per 1 000 m (3 kt per 1 000 ft). In cold weather, subtract 18.5 km/h (10 kt) when OAT is below -30°C.</li> <li>** At sea level. At higher altitudes, subtract 18 km/h (10 kt) per 1 000 m (3 kt per 1 000 ft). In cold weather, subtract 37 km/h (20 kt) when the OAT is below -20°C. Do not subtract when speed is below 120 km/h (65 kt).</li> </ul>		
CG RANGE	Longitudinal: Forward (mm) Rear (mm) Gross Weight (kg) 3 170 3500 1 200 and below 3 170 3444 2 000 3 200 3 430 2 200 Straight line variation between points given Lateral (See Note 5): - Left of CL: 80 mm - Right of CL: 80 mm		
MAXIMUM WEIGHT	2 200 kg (4 850 lb).		
MINIMUM CREW	1 pilot in the right side.		
NUMBER OF SEATS	6 maximum (pilot included)* (*) When the aircraft is fitted with the two-place seat optional equipment, the number of seats is increased to seven (pilot included). This optional is to be used in accordance with the corresponding Flight Manual supplement.		
FUEL CAPACITY	Total: 540 liters Usable fuel: 538.75 liters Unusable fuel: 1.25 liters		
OIL CAPACITY	Engine: 5.2 liters MGB: 6.5 liters TGB: 0.33 liters		
MAXIMUM OPERATING ALTITUDE	6 096 m (20 000 ft)		
S/N's ELIGIBLE	1822 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 AS 350 B2 (Normal Category), approved 06 November 1990.

ENGINE	Turbomeca Arriel 1D1 (See TCDS EM-8012).
FUEL	Jet A, Jet A-1, Jet B, JP-5 or JP-8. (See RFM for emergency fuels)

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ENGINE LIMITS	Take-off: - shaft limit torque: 830 N.m - minimum guaranteed power: 531 kW (712 hp) - gas generator speed (?Ng): with P2 air bleed: -0.6 without P2 air bleed: 0 (see Note 6) - T4: 845°C (See Note 7) Maximum continuous power: - shaft limit torque: 830 N.m - minimum guaranteed power: 466 kW (625 hp) - gas generator speed: 98 %, corresponding $\Delta$ Ng = -3.5 (see Note 6) - T4: 795°C (See Note 7) Maximum transient (5 seconds) - gas generator speed: 107.5 %, corresponding $\Delta$ Ng = +6 (See Note 6) T4: 00502 (Dee Note 7)			
ROTOR LIMITS	Power on: - on the ground at low pitch: 3 - in stabilized flight: 390 +4/-5 Power off: - maximum: 430 rpm (audio wa - minimum: 320 rpm (audio wa	80 ± 5 rpm rpm arning sounds a arning sounds at	it 410 rpm) t 360 rpm)	
OIL	Refer to Flight Manual.			
AIRSPEED LIMITS (IAS)	<ul> <li>Never exceed speed (V<sub>NE</sub>): - Power on: 287 km/h (155 kt)* - Power off: 232 km/h (125 kt)**</li> <li>* At sea level. At higher altitudes, subtract 18 km/h (10 kt) per 1 000 m (3 kt per 1 000 ft). In cold weather, subtract 18.5 km/h (10 kt) when OAT is below -30°C.</li> <li>** At sea level. At higher altitudes, subtract 18 km/h (10 kt) per 1 000 m (3 kt per 1 000 ft). In cold weather, subtract 37 km/h (20 kt) when the OAT is below -20°C. Do not subtract when speed is below 120 km/h (65 kt).</li> </ul>			
CG RANGE	Longitudinal: Forward (mm) Re 3 170 3 170 3 170 3 210 Straight line variation betwee Lateral (See Note 5) - Left of CL: 80 mm - Right of CL: 80 mm	ear (mm) 3 500 3 490 3 460 3 425 een points given	Gross Weight (kg) 1 200 and below 1 750 2 000 2 250	
MAXIMUM WEIGHT	2 250 kg (4 960 lb).			
MINIMUM FLIGHT CREW	1 pilot in the right side.			

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NUMBER OF SEATS	6 maximum (pilot included)* (*) When the aircraft is fitted with the two-place seat optional equipment, the number of seats is increased to seven (pilot included). This optional is to be used in accordance with the corresponding Flight Manual supplement.		
FUEL CAPACITY	Total: 540 liters (142.70 US ga Usable fuel: 538.75 liters (142. Unusable fuel: 1.25 liters (0.33	l) 34 US gal) 5 US gal)	
OIL CAPACITY	Engine: 5.2 liters (1.37 US gal) MGB: 6.5 liters (1.72 US gal) TGB: 0.33 liters (0.09 US gal)	1	
MAXIMUM OPERATING ALTITUDE	6 096 m (20 000 ft).		
S/N's ELIGIBLE	2100 and subsequent. <u>Imported aircraft</u> : A Certificate of Airworthiness for "Import Requirements" must aircraft for which application Airworthiness is made. <u>Aircraft manufactured in Brazil</u> :	or Export endorsed as be submitted for ea n for a Brazilian ( see Note 8.	s noted under ach individual Certificate of

# III - Model AS 350 BA (Normal Category), approved 22 July 1992.

ENGINE	Turbomeca Arriel 1B (See TCDS nº EM-8012).	
FUEL	Jet A, Jet A-1, Jet B or JP-4. (See RFM for emergency fuels)	
ENGINE LIMITS	Take-off (5 min):* - shaft limit torque: 829 N.m - minimum guaranteed power: 478 kW (641 hp) - gas generator speed: 51 800 rpm - T4: 810°C	
	Maximum continuous power:* - shaft limit torque: 829 N.m - minimum guaranteed power: 440 kW (590 hp) - gas generator speed: 50 750 rpm - T4: 775°C	
	Maximum transient (5 sec):* - gas generator speed: 54 300 rpm - T4 max. overtemperature on starting: 840°C * Standard sea level conditions.	
ROTOR LIMITS	Power on flight: 390 +4/-5 rpm Power off flight: - maximum: 430 rpm (aural alarm at 410 rpm) - minimum: 320 rpm (aural alarm at 360 rpm)	

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OIL	Refer to Flight Manual.		
AIRSPEED LIMITS (IAS)	<ul> <li>Never exceed speed (V<sub>NE</sub>): - Power on: 287 km/h (155 kt)* <ul> <li>Power off: 231 km/h (125 kt)**</li> </ul> </li> <li>* At sea level. At higher altitudes, subtract 18 km/h (10 kt) per 1 000 m (3 kt per 1 000 ft). <ul> <li>In cold weather, subtract 19 km/h (10 kt) when OAT is below -30°C.</li> </ul> </li> <li>** At sea level. At higher altitudes, subtract 18 km/h (10 kt) per 1 000 m (3 kt per 1 000 ft). <ul> <li>In cold weather, subtract 19 km/h (10 kt) when OAT is below -30°C.</li> </ul> </li> <li>** At sea level. At higher altitudes, subtract 18 km/h (10 kt) per 1 000 m (3 kt per 1 000 ft). <ul> <li>In cold weather, subtract 19 km/h (10 kt) when the OAT is between -20°C and -30°C and 37 km/h (20 kt) when the OAT is below -30°C. Do not subtract when speed is below 120 km/h (65 kt).</li> </ul> </li> </ul>		
CG RANGE	Longitudinal: Forward (mm) Rear (mm) Gross Weight (kg) 3 170 3 500 1200 and below 3 170 3 490 1 750 3 170 3 460 2 000 3 185 3 445 2 100 Straight line variation between points given Lateral (See Note 5) - Left of CL: 80 mm - Right of CL: 80 mm		
MAXIMUM WEIGHT	2 100 kg (4 630 lb)		
MINIMUM CREW	1 pilot in the RH seat.		
NUMBER OF SEATS	6 maximum (pilot included)* (*) When the aircraft is fitted with the two-place seat optional equipment, the number of seats is increased to seven (pilot included). This optional is to be used in accordance with the corresponding Flight Manual supplement.		
FUEL CAPACITY	Total: 540 liters Usable fuel: 538.75 liters Unusable fuel: 1.25 liters		
OIL CAPACITY	Engine: 5.2 liters MGB: 6.5 liters TGB: 0.33 liters		
MAXIMUM OPERATING ALTITUDE	4 875 m (16 000 ft)		
S/N's ELIGIBLE	2588 and subsequent. <u>Imported aircraft</u> : 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. <u>Aircraft manufactured in Brazil</u> : see Note 8.		

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## IV - Model AS-350B3 (Normal Category), approved 15 September 1998.

ENGINE	Turbomeca Arriel 2B or 2B1 (See TCDS nº EM-9802).		
FUEL	Jet A, Jet A-1, JP-5 or JP-8. (See RFM for emergency fuels)		
ENGINE LIMITS	Take-off: - shaft limit torque: 716 N.m - minimum guaranteed power: 450 kW (603 hp) - gas generator speed: 49 400 rpm (NG = 94.8%, ΔNg = -4) Vi>70kt 50 599 rpm (NG = 97.1%, ΔNg =-4) Vi<70kt - T4: 849°C (See Note 7)		
	Maximum transient (5 sec): - gas generator speed: 53 308 rpm (102.3%+1) - T4: 865°C		
ROTOR LIMITS	Power on: - on the ground with low pitch: $380 \pm 5$ rpm - in stabilized flight: $390 + 4/-5$ rpm		
	Power off: - maximum: 430 rpm - minimum: 320 rpm		
	Note: The worn sounds when the rotor speeds: - below 360 rpm (continuous sound) - above 410 rpm (intermittent sound).		
OIL	Refer to Flight Manual		
AIRSPEED LIMITS (IAS)	<ul> <li>Never exceed speed (V<sub>NE</sub>): - Power on: 287 km/h (155 kt)* - Power off: 231 km/h (125 kt)**</li> <li>* At sea level. At higher altitudes, subtract 18 km/h (10 kt) per 1 000 m (3 kt per 1 000 ft). In cold weather, subtract 19 km/h (10 kt) when OAT is below -30°C.</li> <li>** At sea level. At higher altitudes, subtract 18 km/h (10 kt) per 1 000 m (3 kt per 1 000 ft). In cold weather, subtract 37 km/h (20 kt) when the OAT is below -20°C. Do not subtract when speed is below 120 km/h (65 kt).</li> </ul>		
	-20°C. Do not subtract when speed is below 120 km/h (65 kt).		
CG RANGE	-20°C. Do not subtract when speed is below 120 km/h (65 kt). Longitudinal: Forward (mm) Rear (mm) Gross Weight (kg) 3 170 3 500 1 200 and below 3 170 3 490 1 750 3 170 3 460 2 000 3 210 3 425 2 250 Straight line variation between points given Lateral (See Note 5) - Left of CL: 180 mm - Right of CL: 140 mm		

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	1 pilot in the right side.		
NUMBER OF SEATS	6 maximum (pilot included)* (*) When the aircraft is fitted with the two-place seat optional equipment, the number of seats is increased to seven (pilot included). This optional is to be used in accordance with the corresponding Flight Manual supplement.		
FUEL CAPACITY	Total: 540 liters Usable fuel: 538.75 liters Unusable fuel: 1.25 liters		
OIL CAPACITY	Engine: 5.2 liters MGB: 6.5 liters TGB: 0.33 liters		
MAXIMUM OPERATING ALTITUDE	7 010 m (23 000 ft)		
S/N's ELIGIBLE	3063 and subsequent. <u>Imported aircraft</u> : A Certificate of Airworthiness "Import Requirements" must aircraft for which application Airworthiness is made. <u>Aircraft manufactured in Brazi</u>	for Export endorsed as be submitted for ea on for a Brazilian ( <u>l</u> : see Note 8.	s noted under ich individual Certificate of

# V - Model EC 130B4 (Normal Category), approved 14 November 2002.

ENGINE	Turbomeca Arriel 2B1 (See TCDS nº EM-9802).		
FUEL	See Rotorcraft Flight Manual for fuel and additive specification.		
ENGINE LIMITS		Gas Generator Speed Ng %(rpm)	Exhaust Gas Temperature T4 °C(°F)
	Max. take-off (5 min) Max. continuous Max. transient Max. continuous starting	101.1 (52 683) 97.1 (50 598) 102.3 (53 308)	915 (1 679) 849 (1 560) 865 (1 589) 750
ROTOR LIMITS	Power on: - maximum continuous: 405 - minimum continuous: 375	5 rpm rpm	
	Power off: - maximum: 430 rpm - minimum: 320 rpm		
	NR aural warning: - low: 360 rpm - high 410 rpm		

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TRANSMISSION TORQUE LIMITS	Max. take-off: Max. continuous: Max. transient (5 s) 100% = 536 kW at 6 0	100 % 92.7 % 104 % 00 rpm = 386 rpm mai	in rotor		
OIL	Refer to Flight Manual	for approved engine a	nd gearbox oils.		
AIRSPEED LIMITS (IAS)	Never exceed speed( * At sea level. At hig	Never exceed speed (V <sub>NE</sub> ): - Power on: 155 kt* - Power off: 125 kt* * At sea level. At higher altitudes, subtract 3 kt per 1 000 ft.			
CG RANGE	Longitudinal: Forward (mm) 3 300 3 150 3 150 3 200 Straight line variation Lateral: from 0.10 m (let	Rear (mm) 3 580 - - 3 480 on between points give eft) to 0.10 m (right).	Gross Weight (kg) 1 500 1 600 2 000 2 400		
MAXIMUM WEIGHT	2 427 kg (5 351 lb)				
MINIMUM CREW	1 pilot in left seat				
NUMBER OF SEATS	7 maximum (pilot includ 8, if left hand side fligh 673 are installed.	<ul><li>7 maximum (pilot included); or</li><li>8, if left hand side flight controls configuration or modification OP 3</li><li>673 are installed.</li></ul>			
FUEL CAPACITY	Total: 540 liters Usable fuel: 538.7 liter	s			
OIL CAPACITY	Engine: 6.2 liters				
MAXIMUM OPERATING ALTITUDE	7 010 m (23 000 ft)				
S/N's ELIGIBLE	3358 and subsequent. <u>Imported aircraft</u> : A Certificate of Airwor "Import Requirements" for which application f made.	3358 and subsequent. <u>Imported aircraft</u> : 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 M	DDELS:				
DATUM	Longitudinal: 3 400 m Lateral: Rotorcraft syn	m ahead of the main ro nmetry plane.	otor head center line.		

LEVELING MEANS Transmission deck (all AS 350 models). Mechanical floor (EC 130B4 model). 02 March 2009

MAXIMUM BAGGAGE	Baggage compartments loads limitations for all AS 350 models: - R. H. lateral compartment: 100 kg - L. H. lateral compartment: 120 kg - Rear compartment: 80 kg			
	Baggage compartments and cargo loads limitations for EC 130B4			
	<ul> <li>- RH compartment</li> <li>- LH compartment</li> <li>- Rear compartment</li> <li>- Cabin Compartment:</li> </ul>	130 kg 155 kg 80 kg	300 kg/m <sup>2</sup> 300 kg/m <sup>2</sup> 145 kg/m <sup>2</sup>	
	Rear cabin floor Forward cabin floor	495 kg 405 kg	300 kg/m <sup>2</sup> 300 kg/m <sup>2</sup>	
ROTOR BLADE AND CONTROL MOVEMENTS	For rigging information	refer to the	Maintenance Manual.	
IMPORT ELIGIBILITY	<ul> <li><u>Complete aircraft (all models)</u>:         <ul> <li>A Brazilian Certificate of Airworthiness may be issued on the basis of on a DGAC 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:</li></ul></li></ul>			
	The ANAC Report H further revisions, cor acceptance of these air	.10-0940-03 ntains the rcraft (See N	B, dated 14 November 2002 or Brazilian requirements for the Note 4).	
CERTIFICATION BASIS	<ul> <li>TC Nº 8812 issued in th</li> <li>RBHA 27, correspondent</li> <li>Special Conditions 17 August 1976; 643 25 June 1985;</li> <li>Special conditions 03 April 1997 (B3 vertice)</li> <li>For aircraft equipped - special conditions Lightning/HIRF;</li> <li>equivalent safety fin Refer AS350B2 (17 November 2006.</li> </ul>	he basis of t ding to FAR specified 37, dated specified i rsion); and with VEMD is on pro indings for po VEMD) C	the following requirements: 2 27 Amdts. 27-1 through 27-10; in DGAC letters 6518, dated 28 July 1977 and 53639, dated n DGAC letter 971726, dated 0, as above plus: tection against the effects of owerplant instrument markings. RI n° A-1, issue 3, dated	

**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 included in the certificated empty weight and loading instructions when necessary, must be provided for each aircraft at its delivery. The certificated empty weight and corresponding center of gravity location must include unusable fuel and undrainable oil. To obtain the proper weight and C. G. information, the helicopter must be jacked up rather than supported on the skids. If modifications affecting the weight and C. G. are applied to the helicopter, consult the instructions on the RFM.
- **NOTE 2** <u>Markings and placards</u>. All markings and placards for passenger information, external markings for emergency, and load limits in cargo/baggage compartments must be presented in Portuguese or bilingual. A list of these placards and the respective translations acceptable by the ANAC is provided in the report H.10-0940-03. The following placard must be displayed in the clear view of the pilot:

"THE MARKINGS AND PLACARDS INSTALLED ON THIS HELICOPTER CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS ROTORCRAFT. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS ROTORCRAFT ARE CONTAINED IN THE ROTORCRAFT FLIGHT MANUAL. THE AIRWORTHINESS LIMITATIONS SECTION OF THE ROTORCRAFT MAINTENANCE MANUAL MUST BE COMPLIED WITH."

For others placards refer to the Brazilian RFM and the Report nº H.10-0940-03.

**NOTE 3** <u>Continuing Airworthiness</u>. Service information, service bulletins, repair manuals, vendor manuals, rotorcraft flight manuals and maintenance manuals, which contain a statement that the document is DGAC approved, are accepted by the ANAC and are considered ANAC approved. These approvals pertain to the type design only. Any alteration to the type design of the rotorcraft may require instructions for Continued Airworthiness. These instructions must be submitted and accepted by the DGAC/ANAC

prior to approval for return to service. The retirement times of certain parts and inspection requirements listed in the section 5.99 "Airworthiness Limitations" are mandatory. These values of retirement times and inspections cannot be changed without DGAC and ANAC engineering approval.

- **NOTE 4** The differences of the Brazilian helicopters relating to the basic DGAC type design are documents summarized in the following documents:
  - 1. The Brazilian Helicopters Flight Manual approved by DGAC on behalf of ANAC; and
  - 2. Marking and Placards in Portuguese language or bilingual (see Note 2).
- **NOTE 5** The lateral values listed in this TCDS correspond to the basic helicopter. Different values are approved for specific optional installations, such as the Hoist, and are listed in the corresponding Supplement of the RFM. However, these increased limits are valid only for flight. For takeoff and landing, it must be used the limits presented in this TCDS and in the Section 2 of the Brazilian RFM approved by the DGAC.

- **NOTE 6** The speeds vary constantly as a function of the external conditions (temperature and altitude) but correspond to a fixed Ng marked "0" on the indicator, which is the limit to be observed by the pilot on takeoff. For other conditions, the figures in brackets correspond to Ng values on the instrument.
- **NOTE 7** T4 correspond to the temperature measured with 3 thermocouples on gas generator gas diffuser.
- NOTE 8 Helibras (Brazil) has signed with Eurocopter (France) a technical cooperation agreement contract to manufacture in Brazil the AS 350 BA, AS 350 B2 and AS 350 B3 models using kits produced by Eurocopter, in conformity to the DGAC approved Type design. Helibras helicopters are produced under Helibras Production Certificate, assembled and tested in accordance with procedures approved under the French type design by Eurocopter and accepted by the ANAC under the terms and conditions of Helibras Production Certificate. Helicopter serial numbers produced by Helibras as the manufacturer are identified in Eurocopter document N° L102-001 (list of serial numbers of stage 2 helicopters produced by Helibras) referenced in both the French and the Brazilian Type Certificate Data Sheets.
- NOTE 9 The TC Holder before 01 January 1992 was: SOCIÉTÉ NATIONALE INDUSTRIELLE AEROSPATIALE 37, Boulevard de Montmorency 75781 Paris Cedex 16 FRANCE

ADEMIR ANTÔNIO ØA SILVA Gerente-Geral de Certificação de Produto Aeronáutico (Manager, Aeronautical Product Certification)

Hélio Tarquinio Junior Certificação de Produto Aeronáutico Gerente Geral - Substituto