

**COMANDO DA AERONÁUTICA
DEPARTAMENTO DE PESQUISAS E DESENVOLVIMENTO
CENTRO TÉCNICO AEROESPACIAL**

TYPE CERTIFICATE DATA SHEET Nº EA-8203

Type Certificate Holder:

ISRAEL AIRCRAFT INDUSTRIES LTD.
Ben Gurion International Airport
ISRAEL

EA-8203
Sheet 01

ISRAEL AIRCRAFT

1124
1124A

January 2006

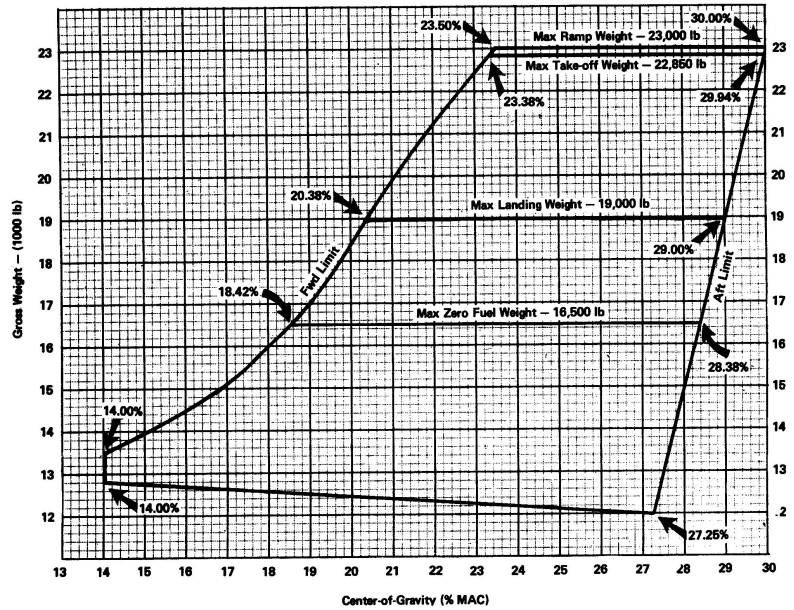
This data sheet, which is part of Type Certificate No. 8203, prescribes conditions and limitations under which the product, for which the Type Certificate was issued, meets the airworthiness requirements of the Brazilian Aeronautical Regulations.

I - Model 1124 (Transport Category), approved 06 April 1982.

ENGINE	2 Garrett AiResearch TFE-731-3-1G turbofan engines. (EM-8213-01)	
AIRSPEED LIMITS (CAS)	Maximum operating with auto-pilot disengaged:	
	V_{MO} – sea level to 4 602m (15 100 ft)	360 kt
	M_{MO} – above 4 602 m (15 100 ft)	0.710 M
	Maximum operating auto-pilot engaged: (See Note 10)	
	V_{MO} – sea level to 5 913 m (19 400 ft)	360 kt
	M_{MO} – above 5 913 m (19 400 ft)	0.765 M
	Maneuvering (V_A)	
	9 390 kg (20 700 lb) gross weight, and above	230 kt
	5 443 kg (12 000 lb) gross weight	159 kt
	Straight line variation between points given.	
	Flap extension (V_{FE})	
	Takeoff (12°) and approach (20°)	252 kt
	Landing (40°)	183 kt
	Speed brake operation (V_{SB}): Speed brakes may be extended and retracted at all speeds approved for flight.	
	Landing gear extended (V_{LE}) & operating speed (V_{LO}):	183 kt
	Minimum control (V_{MCA}) (12° flap)	97 kt
	Tire limit ground speed (embossed tire):	174 kt (200 mph)

C. G. RANGE
(Landing Gear Extended)

Approved center-of-gravity range is as shown in following figure.
(Gear extension and retraction moment is negligible).



FUEL CAPACITY

	Total – liters (US Gal)	Usable– liters (US Gal)	Arm – cm (in)
2 main tanks	2 063 (545)	2 033 (537)	112.9 (286.7)
2 tip tanks	435 (115)	428 (113)	111,1 (282.2)
1 long range fuel tank (if installed)	382 (101)	378 (100)	140,9 (358.0)

See Note 1 for data on system fuel.

**CONTROL SURFACE
MOVEMENTS**

Surface:	Travel:	Tolerance:
Aileron	Up 12°30' Down 12°30'	+/- 1°
Aileron Trim Tab	Up 13° Down 15°	+2° -1° +/-2°
Aileron Servo Tab	Down 26° (Ail. full up) Center (Ail. 0°) Up 28° (Ail. full dn)	+/- 3°
Rudder	Left 22° Right 22°	+/- 30°
Rudder Tab	Left 11°30' Right 11°30'	+2° -1° (*)

(*) Rudder at neutral

**CONTROL SURFACE
MOVEMENTS (Cont.)**

Elevator	Up	22°30'	+/- 30'
	Down	12°	
Horizontal Tail	Up	0°	+12'/-0
	Down	5°12'	+0/-12'
Flap	Down	40°	+/-1°
Speed brake/lift dampers	Up	45°	+3° (*)/-1
(*)	LH and RH surfaces to be symmetrical with respect to each other within +/-2°.		

CERTIFICATION BASIS

The certification basis for the aircraft are those indicated in the CAA Type Certificate Data Sheet No. A21L, dated 15 Jan. 19881, as follows:

- U.S. CAR 4b, effective 31 Dec. 1953, including amendments through 4b-11, 4b-12, paragraphs 4b.132(e), 4b.151(a), 4b.155, 4b.156, 4b.157, 4b.158, 4b.160, 4b.162, 4b.191, 4b.210(b)(5), 4b.603(k), 4b.711 and paragraphs pertaining to engine fire shielding;
- U.S. SR422b, effective 9 Jul. 1959;
- U.S. SR450A, effective 31 Aug. 1962;
- U.S. FAR 25.771 Amdt. 25-4;
- Retroactive requirements for U.S. FAR 25.2 adopted in amendments 25-15, 25-17 and 25-20.
- U.S. FAR 36 effective 1 Dec. 1969, including amendment 36-8;
- In addition the following U.S. FAR 25 paragraphs, up to and including amendment 25-34, will replace the corresponding CAR 4b paragraphs: 25.831 thru 25.843, 25.901 thru 25.1203, 25.1305 and 25.1521;
- U.S. FAR 33.97 per amendment 33-3 and FAR 33.99;
- U.S. SFAR 27, effective 1 Jan. 1974;
- Special Conditions specified in FAA letters 13 Dec. 1963 and 2 Jun. 1964;
- Special Conditions No. 25-37-EU-8, dated 16 Nov. 1971; and
- Special Conditions specified in CAA letter dated 25 Nov. 1975.

REQUIRED EQUIPMENT

The basic required equipment as prescribed in the applicable airworthiness regulation (see Certification Basis) must be installed in the aircraft for certification. See IAI Report 4450/9018 Master Equipment List Model 1124.

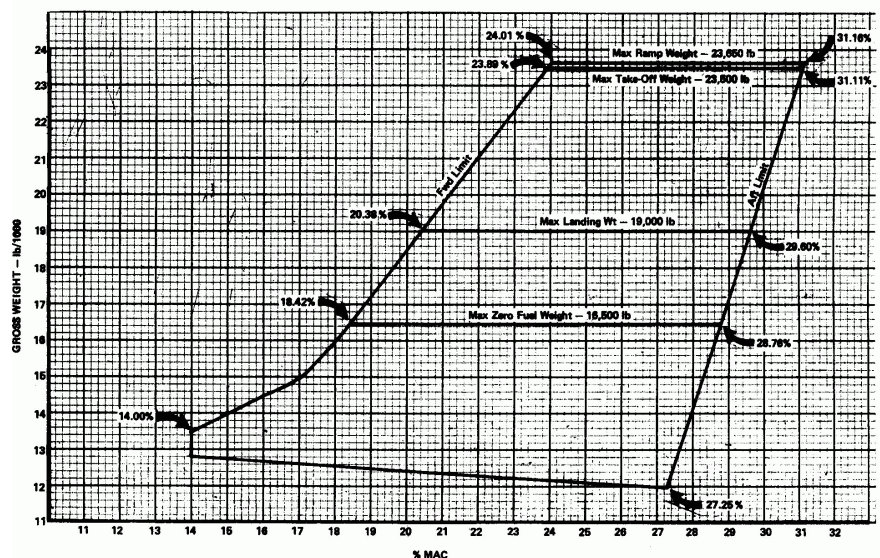
In addition the CAA approved Model 1124 Airplane Flight Manual, dated 15 Apr. 1978 and updated to the latest revision, is required. (See Note 5).

II - Model 1124A (Transport Category), approved 04 de June 1982. (See Note 13)

ENGINE	2 Garrett AiResearch TFE-731-3-1G turbofan engines. (EM-8213-01)
AIRSPEED LIMITS (CAS)	<p>Maximum operating:</p> <p>V_{MO} – sea level to 5 944 m (19 500 ft) 360 kt</p> <p>V_{MO} – above 5 944 m (19 500 ft) reduce by 6 kt per 305 m (1 000 ft) until 9 754 m (32 000 ft) 285 kt</p> <p>M_{MO} – 9 754 m (32 000 ft) 0.785 M</p> <p>Maneuvering (V_A):</p> <p>9 390 kg (20 700 lb) gross weight, and above 230 kt</p> <p>5 443 kg (12 000 lb) gross weight 159 kt</p> <p>Straight line variation between points given.</p> <p>Flap extension (V_{FE}):</p> <p>Takeoff (12°) and approach (20°) 252 kt</p> <p>Landing (40°) 183 kt</p> <p>Speed brake operation (V_{SB}): Speed brakes may be extended and retracted at all speeds approved for flight.</p> <p>Landing gear extended (V_{LE}) & operating speed 183 kt</p> <p>(V_{LO}):</p> <p>Minimum control (V_{MCA}) - 12° flap: 97 kt</p> <p>Tire limit ground speed (embossed tire): 174 kt (200 mph)</p>

C. G. RANGE (Landing Gear Extended)

Approved center-of-gravity range is as shown in following figure.
(Gear extension and retraction moment is negligible).



FUEL CAPACITY

	Total – liters (US Gal)	Usable– liters (US Gal)	Arm – cm (in)
2 main tanks	2 108 (557)	2 078 (549)	112.9 (286.7)
2 tip tanks (*)	2 063 (545)	2 033 (537)	112.9 (286.7)
2 tip tanks	435 (115)	428 (113)	111,1 (282.2)
1 long range fuel tank (if installed)	382 (101)	378 (100)	140,9 (358.0)

(*) Aircraft serial number 239 only.

See Note 1 for data on system fuel.

**CONTROL SURFACE
MOVEMENTS**

Surface:	Travel:	Tolerance:
Aileron	Up 12°30' Down 12°30'	+/- 1°
Aileron Trim Tab	Up 13° Down 15°	+2° -1° +/-2°
Aileron Servo Tab	Down 26° (Ail. full up) Center (Ail. 0°) Up 28° (Ail. full dn)	+/- 3°
Rudder	Left 22° Right 22°	+/- 30°
Rudder Tab	Left 11°30' Right 11°30'	+2° -1° (*)
		(*) Rudder at neutral
Elevator	Up 22°30' Down 12°	+/- 30°
Horizontal Tail	Up 30° Down 4°42'	+12°/-0 +0°/-12°
Flap	Down 40°	+/-1°
Speed brake/lift dampers	Up 45°	+3° (*)/-1
(*)	LH and RH surfaces to be symmetrical with respect to each other within +/-2°.	

CERTIFICATION BASIS

The certification basis for the aircraft are those indicated in the CAA Type Certificate Data Sheet No. A21L, dated 15 Jan. 19881, as follows:

- U.S. CAR 4b, effective 31 Dec. 1953, including amendments through 4b-11, 4b-12, paragraphs 4b.132(e), 4b.151(a), 4b.155, 4b.156, 4b.157, 4b.158, 4b.160, 4b.162, 4b.191, 4b.210(b)(5), 4b.603(k), 4b.711 and paragraphs pertaining to engine fire shielding;

**CERTIFICATION BASIS
(Cont.)**

- U.S. SR422b, effective 9 Jul. 1959;
- U.S. SR450A, effective 31 Aug. 1962;
- U.S. FAR 25.672 Amdt. 25-23, because of lateral stability 4b.158;
- U.S. FAR 25.771 Amdt. 25-4;
- Retroactive requirements for U.S. FAR 25.2 adopted in amendments 25-15, 25-17 and 25-20.
- U.S. FAR 36 effective 1 Dec. 1969, including amendment 36-8;
- In addition the following U.S. FAR 25 paragraphs, up to and including amendment 25-34, will replace the corresponding CAR 4b paragraphs: 25.831 thru 25.843, 25.901 thru 25.1203, 25.1305 and 25.1521;
- U.S. FAR 33.97 per amendment 33-3 and FAR 33.99;
- U.S. SFAR 27, effective 1 Jan. 1974;
- Special Conditions specified in FAA letters 13 Dec. 1963 and 2 Jun. 1964;
- Special Conditions No. 25-37-EU-8, dated 16 Nov. 1971; and
- Special Conditions specified in CAA letter dated 25 Nov. 1975.

REQUIRED EQUIPMENT

The basic required equipment as prescribed in the applicable airworthiness regulation (see Certification Basis) must be installed in the aircraft for certification. See IAI Report 4650/9018 Master Equipment List Model 1124A.

In addition the CAA approved Model 1124A Airplane Flight Manual, dated 1 Set. 1979 and updated to the latest revision, is required. (See Note 5).

DATA PERTINENT TO ALL MODELS:

ENGINE LIMITS

Static thrust uninstalled (standard day, sea level)

Takeoff (5 min.) 16.46 kN (3 700 lb)

Maximum continuous 16.46 kN (3 700 lb)

Maximum permissible engine-rotor operating speed (continuous)

Low pressure rotor (N1) 21 000 rpm (101.5 %)

High pressure rotor (N2) 29 692 rpm (100.0 %)

Maximum permissible temperature interstage turbine temperature (ITT):

Maximum continuous °C (°F) 885 (1625)

Takeoff - 5 min. °C (°F) 907 (1665)

During starting °C (°F) 907 (1665)

ENGINE LIMITS (Cont.)	Oil Inlet Temperature:	Up to 9 144 m (30 000 ft)	Above 9 144 m (30 000 ft)
	Fan gear box inlet, max. °C (°F)	127 (260)	140 (284)
	Fan gear box inlet, max. 2 min. transient °C (°F)	149 (300)	149 (300)
	Accessory gear box inlet, max. °C (°F)	149 (300)	315 (157)
	Maximum bleed and power extraction: Bleed - See Garrett AiResearch Installation Manual IM-8001 Power – See IAI Model 1124 AFM		
FUEL	<ul style="list-style-type: none"> – Conforming to Garrett AiResearch spec. EMS53111 (Jet A), EMS53112 (Jet A-1), EMS53113 (Jet B & JP-4), EMS53116 (JP-5). – Aviation gasoline per MIL-G-5572D grade 80/87, 100/130, 115/145 permissible as emergency fuel, when used per CAA-approved Airplane Flight Manual limitation. – Fuel additives - per Note 7. 		
OIL	Conforming to Garrett AiResearch specification EMS53110, Class B.		
FUEL CONTROL COMPUTER	2 Garrett AiResearch fuel computer P/N 2101144-1.		
DATUM	Fuselage station 0, located 9.175 m (361.2 in) forward of engine nacelle leading edge.		
MEAN AERODYNAMIC CHORD	2.29 m (90.2 in) with leading edge of fuselage Station 254.0		
LEVELING MEANS	Longitudinally – top center line at fuselage (constant section). Laterally – across floor beams – inside cabin door.		
MAXIMUM WEIGHTS	Ramp gross weight:	10 727 kg (23 650 lb)	
	Takeoff weight:	10 660 kg (23 500 lb)	
	Landing weight:	8 618 kg (19 000 lb)	
	Maximum zero fuel weight:	7 484 kg (16 500 lb)	
MINIMUM CREW	2 (pilot and co-pilot)		
MAXIMUM PASSENGERS	10 (limited by approved seating arrangement)		
MAXIMUM BAGGAGE	Main baggage compartment	372 kg (820 lb) at station 356	
	Rear baggage compartment	113 kg (250 lb) at station 453	
	See Note 12 when long-range fuel tank is installed.		

OIL CAPACITY	2 engine reservoirs. Total: 5.68 liters (1.5 US gal) each Usable: 1.89 liters (0.5 US gal) each See Note 1 for data on system oil.
MAXIMUM OPERATING ALTITUDE	13 716 m (45 000 ft). 5 639 m (18 500 ft) when operating with aviation gasoline.
S/N'S ELIGIBLE	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.
PRODUCTION CERTIFICATION	None.
IMPORT ELIGIBILITY	A Brazilian Certificate of Airworthiness may be issued on the basis of on an CAA – Israel Civil Aviation Administration 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 CTA Type Certificate no. 8203 and in condition of safe operation”. The CTA Report H.10-0240-03, dated 30 January 2006 or further revisions, contains the Brazilian requirements for the acceptance of these airplanes. (See Note 4)

NOTES:**NOTE 1** Weight and balance:

- a) Current weight and balance report including list of equipment included in certificated empty weight and loading instructions must be in each aircraft at the time of original certification and at all times thereafter.
- b) The airplane must be loaded so that the C.G. is within the specified limits at all times.
- c) The weight of system fuel and oil as defined below and hydraulic fluid must be included in the empty weight of the airplane.

System fuel	Liter (US gal)	Arm – cm (in)
Unusable (drainable from tank-drain and fuel lines)	59.8 (15.8)	115 (292)
Undrainable fuel (trapped tanks and lines) - Total	14.0 (3.7)	117 (297)
Undrainable fuel (trapped in lines)	4.2 (1.1)	142 (360)
Unusable - tip tanks	12.9 (3.4)	112 (285)
Undrainable - tip tanks		negligible
Unusable (drainable) long range fuel tank	3.8 (1.0)	141 (358)

NOTE 1 (Cont.)	Oil system Unusable oil (drainable each engine) Undrainable oil (engines)	Liter (US gal) Arm – cm (in) 3.8 (1.0) 155.5 (395) negligible
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 to CTA is provided in the report H.10-0240-XX (see Import Eligibility). All placards required in the Limitations Section of the Airplane Flight Manual must be installed in the appropriate locations in the airplane.	
NOTE 3	<u>Continuing Airworthiness:</u> Information essential to the proper servicing and maintenance of the aircraft is contained in the Manufacturer's Maintenance Manual. Approved Airworthiness Limitations for inspection time limits, maintenance checks, mandatory retirement life information and other requirements for continued airworthiness, are included in Chapter 5 of the 1124/1124A latest approved revision of the Maintenance Manual.	
NOTE 4	The differences between Brazilian airplanes in relation to the basic CAA – Israel Civil Aviation Administration approved type design are summarized below: 1. The Brazilian AFM (see Note 5); and 2. Markings and placards in the Portuguese language (see Note 2).	
NOTE 5	<u>Airplane Flight Manual (AFM):</u> The Brazilian AFM for these airplanes are the respective original CAA-Israel approved AFM (see Required Equipment), incorporating the specific pages applicable to Brazilian registered airplanes.	
NOTE 6	All optional installations required by the operators must be approved by the CAA-Israel.	
NOTE 7	Philips PFA-55MB anti-icing additive at a concentration not in excess of 0.15% by volume, or anti-icing additive consisting of 100% ethylene glycol monomethyl ether per MIL-1-27686E is approved and may be used in fuel for this aircraft. No fuel system anti-icing credit is allowed.	
NOTE 8	Use Skydrol 500A or 500B hydraulic fluid only.	
NOTE 9	All seats, although they comply with TSO-C39, must also be demonstrated to meet CAR 4b.358(c).	
NOTE 10	Collins AP105 auto-pilot installed in accordance with Israel Aircraft Industries Ltd. Avionics installation top drawing CMA-70000 for all model 1124 serial numbers. V _{MO} /M _{MO} auto-pilot disconnect warning system in accordance with IAI Ltd. drawing 4813661 for model 1124. Stabilizer trim-in-motion aural warning device in accordance with IAI Ltd. drawing 5573515 for model 1124. Pilot's airspeed indicator marked in accordance with IAI Ltd. drawing 3883615 for models 1124 aircraft.	

NOTE 11 Models 1124 aircraft may be fitted with optional installations, comprising avionics, furnishing and other passenger conveniences, in accordance with Israel Aircraft Industries Ltd. top drawing CMA-10000.

NOTE 12 Model 1124 or Model 1124A airplane when modified in accordance with IAI top drawing CMA 61012-501 "Long range fuel tank" - in the Main baggage compartment, shall be operated in accordance with CAA- approved Airplane Flight Manual Supplement No. 4 for Model 1124 or Supplement No. 1 for Model 1124A and shall be operated with the following additional limitations:

- Maximum baggage	Main baggage compartment
if long range fuel tank is not installed	372 kg (820 lb)
if long range fuel tank is installed and full	68 kg (150 lb)
if long range fuel tank is installed but empty	245 kg (540 lb)

NOTE 13 The Model 1124A differs from previous model 1124 as follows:

- Addition of winglets on the wings tip tanks;
- New leading edge profile; and
- New autopilot Collins FCS-80.

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