

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A78EU Revision 8 PILATUS PC-12 PILATUS PC-12/45 November 23, 1999

TYPE CERTIFICATE DATA SHEET No. A78EU

This data sheet which is a part of Type Certificate No. A78EU prescribes conditions and limitations under which the product for which the Type Certificate was issued, meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder. PILATUS AIRCRAFT LTD.
CH-6370 STANS
SWITZERLAND

I. Pilatus PC-12, Normal Category, approved July 15, 1994.

Engine. Pratt & Whitney PT6A-67B

Fuel. JET A, JET A-1, JET B, JP 4 and other fuels according to
PRATT & WHITNEY Service Bulletin SB 14004.

Engine Limits.

	Shaft Power	Torque	N ₁ Gas Generator Speed	Prop Shaft Speed	Maximum Observed Inter Turbine Temp.
	shp	PSI	%	RPM	°C
Take-off	1200	44.34	104	1700	800
Max. climb/Max. cruise	1000	36.95	104	1700	760
Starting (5 seconds)	---	---	---	---	1000
Transient (20 seconds)	---	61.00	104	1870	870

Note: 100% Gas Generator Speed = 37,468 RPM

Propeller and Propeller
Limits.

Hartzell HC-E4A-3D hub with Hartzell E10477K aluminum blades;
four blade constant speed type.

Spinner: Hartzell D5500-1 (Aluminum)

Diameter: 104 in (2.642 m) to 105 in (2.667 m)
cropping of blade tips not permitted.

Pitch settings (measured at 42 in. station)

Fine pitch	19.0°	
Min. pitch in flight		6.0°
Max. reverse pitch		-17.5°
Feathered		79.6°

Stabilized ground operation is prohibited between 350 and 950 RPM.

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<u>Airspeed Limits (EAS).</u>	Max. operating speed	V_{MO}	240 kts
	Max. operating Mach No.	M_{MO}	0.48
	Max. diving speed	V_D	280 kts
		M_D	0.60 M
	Max. maneuvering design speed	V_A	170 kts
	Max. maneuvering operating speed	V_O	154 kts at 4100 kg (9039 lbs)
		V_O	136 kts at 3200 kg (7060 lbs)
		V_O	123 kts at 2600 kg (5730 lbs)

Center of Gravity Limits. At 4100 kg (9039 lbs) 27% MAC to 44% MAC

Forward cg limit varies linearly between: (landing gear extended)

4100 kg (9039 lbs)	27% MAC
3700 kg (8158 lbs)	17.8% MAC
2700 kg (5954 lbs) and less	13% MAC

Rear cg limit varies linearly between: (landing gear retracted)

4100 kg (9039 lbs)	44% MAC
3600 kg (7938 lbs)	46% MAC
3000 kg (6615 lbs)	46% MAC
2550 kg (5623 lbs) and less	20% MAC

Datum. 3000 mm (118 in.) forward of firewall (frame no. 10).

Leveling Means. Cabin Seat Rails
(see Section 8 of the Airplane Maintenance Manual).

<u>Maximum Weight.</u>	Ramp weight	4120 kg	(9083 lbs)
	Take-off weight	4100 kg	(9039 lbs)
	Landing weight	4100 kg	(9039 lbs)
	Max. zero fuel weight	3700 kg	(8159 lbs)

Minimum Crew. One pilot.

Number of Seats. 9 PAX and 2 pilot seats
(for seat locations see Airplane Flight Manual, Section 6, W & B).

Maximum Baggage. 180 kg (400 lbs)
(baggage compartment at rear of cabin).

Maximum Loading. (Combi version) 1000 kg/m² (205 lb/ft²) on seat rails
600 kg/m² (125 lb/ft²) on cabin floor
(for loading limitations/instructions see Section 6 of the Airplane Flight Manual).

<u>Fuel Capacity.</u> (Specific gravity 0.806 kg/ltr)	<u>Total</u>	<u>Usable</u>	<u>Arm</u>
	1540 ltr (1241 kg) (406 US gal)	1516 ltr (1222 kg) (400 US gal)	5.91 m (233 in) aft of datum
		1522 ltr (1226 kg) (402 US gal)	(see Note 1)

<u>Oil Capacity.</u>	<u>Total</u>	<u>Arm</u>
	13,6 3.6 US gal)	2.41 m (95 in) aft of datum

Control Surface.

Wing flap	15° + 0° / -1.5° Take-off (left/right asymmetry 1°)	39.5° +/- 0.5° Landing
Ailerons	30° +/- 1° Up	10° +/- 1° down
Elevator	28° +/- 1° Up	15° +/- 1° down
Stabilizer (trim) (with respect to stabilizer leading edge)	2.5° + 0.7° / - 0.2° up	7.5° + 0.7° / - 0.2° down
Rudder (from centerline and measured horizontally)	35° +/- 1° right	25° +/- 1° left
Rudder tab (trim)	7.5° + 1° / - 1.5° right	13° +/- 1.5° left
Aileron tab (trim)	16.5° +/- 1° up	16.5° +/- 1° down

Stick Pusher System.

Stick shaker/stick pusher system, signaled by AOA vanes on left and right wing leading edges.

Serial Numbers Eligible.

SN 101 and up (See Note 5).

Import Requirements.

- a. To be considered eligible for operation in the United States, each aircraft manufactured under this type certificate must be accompanied by a certificate of airworthiness for export or certifying statement endorsed by the exporting foreign civil airworthiness authority which states (in the English language): "This aircraft conforms to its U.S. type design (Type Certificate Number A78EU) and is in a condition for safe operation".
- b. An airplane maintenance manual in compliance with FAR 23.1529 must be furnished before delivery of the first airplane or issuance of standard certificate of airworthiness whichever occurs later.

Certification Basis.

- 1) 14 CFR Sections 21.29, 21.183(c) and 14 CFR 23, Normal Category, effective February 4, 1991, including Amendments 23-1 through 23-42 and Section 23.1305(c)3) of Amendment 23-43 and Section 23.1507 of Amendment 23-45 and
- 2) 14 CFR Section 36, effective November 18, 1969, including Amendments 36-1 through amendment in effect at the time of U.S. Type Certification, and
- 3) 14 CFR Section 34, effective September 10, 1990, and
- 4) Equivalent Level of Safety,
 - a) ACE-94-8 of June 21, 1994, Spin demonstration, FAR 23.221 a)2)
 - b) Fuel pressure indicator, FAR 23.841b) 6)
- 5) Section 611(b) of the FAA Act of 1958
- 6) Certification Maintenance Requirement (CMR), manual pitch trim system annunciation

Equipment.

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

Airplane Flight Manual (include. applicable supplements)	Report No. 01973-001 including Equipment List
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Service Information.

"Service Bulletins, Airplane Flight Manuals incl. Supplements and any other service information, which contain a statement that the document is Swiss Federal Office of Civil Aviation (FOCA) approved, are accepted by the FAA and are considered FAA approved. These approvals pertain to the type design only."

Available Documents for the PILATUS PC-12 are:

Airplane Flight Manual	Doc. No. 01973-001 Revision 2, dated February 14, 1995 or later FOCA approved revisions.
Aircraft Maintenance Manual (Chapter 4 FOCA approved)	Doc. No. 02049.
Structural Repair Manual	Doc. No. 02050.
Illustrated Parts Catalogue	Doc. No. 02051.

II. Pilatus PC-12/45 (Normal Category), approved July 31, 1996.

The data given above is valid except where mentioned below:

Airspeed Limits (EAS):

Max. diving speed	V_D	290 kts
	M_D	0.62 M
Max. maneuvering operating speed	V_O	161 kts (4500 kg)
Stall speed (at 4500 kg)	Flaps up	93 kts (CAS)
(engine running flight idle)	Flaps down	65 kts (CAS)

Center of Gravity Limits.

At 4500 kg 30% MAC to 43% MAC

Forward cg limit varies linearly between: (landing gear extended)

4500 kg	30% MAC
3700 kg	18% MAC
2600 kg and less	13% MAC

Rear cg limit varies linearly between: (landing gear retracted)

4500 kg	43% MAC
3600 kg	46% MAC
3000 kg	46% MAC
2600 kg and less	20% MAC

Maximum Weights.

Ramp weight	4520 kg (9965 lbs)
Take-off weight	4500 kg (9921 lbs)
Landing weight	4500 kg (9921 lbs)
Max. Zero fuel weight	4100 kg (9039 lbs)

Control Surface Movements.

Wing flaps	15°	+0°/-1.5°	Normal Take-off
	30°	+0°/-1.5°	Short Take-off
	39.5°	+/-0.5°	Landing
	(left/right asymmetry 1°)		

Certification Basis.

- 1) 14 CFR Sections 21.29, 21.183(c) and 14 CFR 23, Normal Category, effective February 4, 1991, including Amendments 23-1 through 23-42 and Section 23.1305c)3) of Amendment 23-43 and Section 23.1507 of Amendment 23-45 and Section 23.49c) and 23.562d) of Amendment 23-44 Section 23.479b) & c) of Amendment 23-45
- 2) 14 CFR Section 36, effective November 18, 1969, including Amendments 36-1 through amendment in effect at the time of U.S. Type Certification, and

- 3) 14 CFR Section 34, effective September 10, 1990, and
- 4) Equivalent level of Safety,
 - a) ACE-94-8 of June 21, 1994, Spin demonstration, FAR 23.221 a)2)
 - b) Fuel pressure indicator, FAR 23.841b)6)
- 5) Section 611(b) of the FAA Act of 1958
- 6) Certification Maintenance Requirement (CMR), manual pitch trim system annunciation

Service Information.

Available Documents for the PILATUS PC-12/45 are:

Airplane Flight Manual Supplement No. 8
 (Doc. No. 01973-001 / 9-08)
 Initial issue, or later FOCA approved revisions.

NOTES

- NOTE 1. Current weight and balance data together with a list of equipment included in the certificated empty weight, and loading instructions, when necessary, must be provided for each airplane at the time of original certification. The certificated empty weight and corresponding center of gravity locations must include the following:
- a) unusable fuel of 19.6 kg (43.2 lbs) at 5.73 m (225.6 in) on S/N 101 up to and including S/N 140.
 unusable fuel of 14.9 kg (32.9 lbs) at 5.73 m (225.6 in) from S/N 141 on onwards.
 - b) engine oil of 9.2 kg (20.3 lbs) at 2.41 m (95.27 in.)
- NOTE 2. Airplane operation must be in accordance with the FOCA-approved Airplane Flight Manual listed above. All placards listed in Section 2 of the AFM must be displayed in the appropriate location.
- NOTE 3. Airworthiness Limitations are contained in the FOCA approved Chapter 4 of the PC-12 & PC-12/45 Aircraft Maintenance Manual. These Limitations may not be changed without FOCA approval.
- NOTE 4. The Model PC-12 & PC-12/45 may be operated in know icing conditions when equipped in accordance with Pilatus Modification PIL 12/00/001, Rev. 1, or later FOCA approved revision.
- NOTE 5. The basic version PC-12 (S/N 101 - 999) may be converted to a version PC-12/45 by executing PILATUS Service Bulletin No. 04-001.
- NOTE 6. Only interior configurations described in the official Pilatus AFM/POH are approved for installaton in the PC-12 and PC-12/45 aircraft. These configurations have been shown to meet the dynamic and HIC test requirements of FAR 23.562. Any alterations to these approved interior layouts must be shown to meet FAR 23.562.

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