DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A55EU
Revision 7
EADS-PZL "Warszawa-Okęcie"
PZL-104 WILGA 80
PZL-104M WILGA 2000
PZL-104MA WILGA 2000

July 30, 2021

TYPE CERTIFICATE DATA SHEET A55EU

This data sheet which is part of Type Certificate No. A55EU 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. EADS-PZL "Warszawa-Okęcie" S.A.
Al. Krakowska 110/114
00-971 Warszawa
Poland

Type Certificate Holder. Panstwowe Zaklady Lotnicze transferred TC A55EU to EADS-PZL "Warszawa-Okęcie" S.A. on April 9, 2004.

I. Model PZL-104 WILGA 80 (Normal Category), approved March 12, 1987

Engine: AI-14RA nine cylinder air cooled radial.
Reduction gear ratio: 0.787:1.

Fuel: 91 (minimum grade aviation fuel)
(maximum tetraethyl lead (Tel) 0.04 oz/lb)

Engine limits

Rating	S.H.P.	R.P.M.	Manifold Pressure (in-Hg)	Altitude (Ft.)	Cyl Head Temp °F (°C)
Maximum continuous	220	2050	31.10 ± 0.1	S.L.	446 (230)
Takeoff (5 min.)	260	2350	31.30 ± 0.4	S.L.	482 (250)

Propeller: US-122000 two blade constant speed.
Diameter: 104.33 inches (2.65m)
(no reduction permitted)

Airspeed limits (CAS)

V_A (Maneuvering)	96 knots (178 km/h)
V_{FE} (Maximum flap extended)	84 knots (156 km/h)
V_{NO} (Maximum structural cruising)	112 knots (208 km/h)
V_{NE} (Never exceed)	126 knots (234 km/h)

See CACA (or CAIB) Polish-approved AFM for airspeed limits when parachuting equipment is installed.

C.G. range: 16.73 in. (30.35% MAC) to 24.25 in. (44.0% MAC) aft of datum.

Datum: Wing slat leading edge

M.A.C.: 55.12 inches (1.4 m) aft of datum

Leveling Means: Longitudinal - By adjusting the elevation of fuselage Bench Mark 6 to be 26.77 inches above the elevation of Bench Mark 5 (left side of the fuselage.) (See ICA)

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Maximum Weight	Takeoff	2866 lb. (1300 kg)			
	Landing	2789 lb. (1265 kg)			
Number of seats	4 (2 at 21.06 in. (0.535 m) aft of datum in the forward position and 2 at 58.54 in. (1.487 m) aft of datum)				
Maximum Baggage	66 lb. (30 kg) (91.38 inches (2.321m) aft of datum).				
Fuel Capacity (U.S. gal.)	Usable - LH tank 22 U.S. gallons RH tank 22 U.S. gallons Total - 44 (moment arm 15.75 in. (0.4 m) aft of datum). See Note 1 for unusable fuel weight & C.G. data.				
Oil capacity	Total - 4.1 U.S. gal (moment arm 15.94 in. forward of datum). See Note 1 for system oil weight & C.G. data.				
Control surface movements	Aileron	Up	26° (± 2°)	Down	16° (± 2°)
	Elevator	Up	38° (± 1°)	Down	18° (± 2°)
	Elevator trim tab	Up	30° (± 2°)	Down	30° (± 2°)
	Rudder	Left	26° (± 2°)	Right	26° (± 2°)
	Flaps	Up	0°	Down	21° (± 2°) and 44° (± 2°)

II. Model PZL-104M WILGA 2000 (Normal Category), approved February 25, 2002

Engine	Lycoming IO-540 K1J5D Lycoming IO-540 K1D5 Lycoming IO-540 K1B5
Fuel	100/100LL minimum grade aviation gasoline

Engine limits

Rating	S.H.P.	R.P.M.	Altitude (Ft.)	Cyl Head Temp °F (°C)
Maximum continuous	300	2700	S.L.	500 (260)
Takeoff	300	2700	S.L.	500 (260)

Propeller

Hartzell HC-C3YR-1RF/F8468A-6R three blade constant speed.
Maximum Diameter: 80.0 inches (2.032 m)
Minimum Diameter (allowed for repairs): 76.0 inches (1.930 m)

Optional propeller as installed per EADS PZL Service Bulletin No. 104M03037
Hartzell HC-C3YR-1RF/F8068 three blade constant speed.
Maximum Diameter: 82.0 inches (2.083 m)

Airspeed limits (CAS)

V_A (Maneuvering)	100 knots (185 km/h)
V_{FE} (Maximum flap extended)	87 knots (162 km/h)
V_{NO} (Maximum structural cruising)	112 knots (208 km/h)
V_{NE} (Never exceed)	131 knots (243 km/h)

See CAIB Polish-approved AFM for airspeed limits when parachuting equipment is installed.

C.G. range	16.0 in. (29.0% MAC) to 24.8 in. (45.0% MAC) aft of datum.
Datum	Wing slat leading edge
M.A.C.	55.12 inches (1.4 m) aft of datum
Leveling Means	Longitudinal - By adjusting the elevation of fuselage Bench Mark 6 to be 26.77 inches above the elevation of Bench Mark 5 (left side of the fuselage.) (See ICA)

Maximum Weights	Takeoff	3086 lb.	(1400 kg)
	Landing	3086 lb.	(1400 kg)
	Maximum zero fuel weight	2998 lb.	(1360 kg)

Number of seats: 4 (2 at 21.06 in. (0.535 m) aft of datum in the forward position and 2 at 58.54 in. (1.487 m) aft of datum)

Maximum Baggage: 66 lb. (30 kg) 91.38 inches (2.321m) aft of datum.

Fuel Capacity (U.S. gal.): Usable - LH tank 50.2 U.S. gallons
RH tank 50.2 U.S. gallons
Total – 100.4 gallons (moment arm 16.5 in. (0.42 m) aft of datum.)
See Note 1 for unusable fuel weight & C.G. data.

Oil capacity: Total – 12.0 U.S. quarts (moment arm 41.54 in. (1.055m) forward of datum).
See Note 1 for system oil Wt. & C.G. data.

Control surface movements					
	Aileron	Up	26° (± 2°)	Down	16° (± 2°)
	Elevator	Up	38° (± 1°)	Down	18° (± 2°)
	Elevator trim tab	Up	20° (± 2°)	Down	20° (± 2°)
	Rudder	Left	26° (± 2°)	Right	26° (± 2°)
	Flaps	Up	0°	Down	21° (± 2°) and 44° (± 2°)

III. Model PZL-104MA WILGA 2000 (Normal Category), approved June 12, 2006 (See Note 4)

Engine: Lycoming IO-540 K1D5
Lycoming IO-540 K1B5

Fuel: 100/100LL minimum grade aviation gasoline

Engine limits

Rating	S.H.P.	R.P.M.	Altitude (Ft.)	Cyl Head Temp °F (°C)
Maximum continuous	290	2575	S.L.	500 (260)
Takeoff	290	2575	S.L.	500 (260)

Propeller: Hartzell HC-E3YR-1RF/F8068 +2 (FAA Certificate No. P33EA)
Three blade constant speed.
Maximum Diameter: 84.0 inches (2.1336 m)
Minimum Diameter (allowed for repairs): 80.0 inches (2.032 m)

Fuel: 100/100LL minimum grade aviation gasoline

Fuel Capacity (U.S. gal.): Usable – 100.4 US gallons (380 l)
Total – 103.6 US gallons (392 l)
See Note 1 for unusable fuel weight & C.G. data.

Oil

Outside Temperature	MIL-L-6082B Spec. Mineral Grades	MIL-L-22851 Spec. Ashless Dispersant Grades
full range of temperatures		SAE 15W50 or 20W50
above +27°C (80°F)	SAE 60	SAE 60
above +16°C (60° F)	SAE 50	SAE 40 or SAE 50
-1° to 32°C (30° to 90° F)	SAE 40	SAE 40
-18° to 21°C (0° to 70° F)	SAE 30	SAE 30, 40, 20W40
below -12°C (10° F)	SAE 20	SAE 30 , 20W30

Oil capacity

Total – 12.0 U.S. quarts (11.4 l) (integrated with engine)
See Note 1 for system oil Wt. & C.G. data.

Airspeed limits (CAS)

V_A (Maneuvering)	104 knots	(192 km/h)
V_{FE} (Maximum flap extended)	87 knots	(162 km/h)
V_{NO} (Maximum structural cruising)	112 knots	(208 km/h)
V_{NE} (Never exceed)	131 knots	(243 km/h)
V_{SO} (Stalling speed)	48 knots	(89 km/h)

Maximum Weights

Takeoff	3307 lb.	(1500 kg)
Landing	3307 lb.	(1500 kg)
Maximum zero fuel weight	3146 lb.	(1427 kg)
Minimum in flight	2377 lb.	(1078 kg)

Flight load factors

Flaps retracted	positive factor	+3.8
	negative factor	-1.52
Flaps extended 44°	positive factor	+2.0
	negative factor	0.0

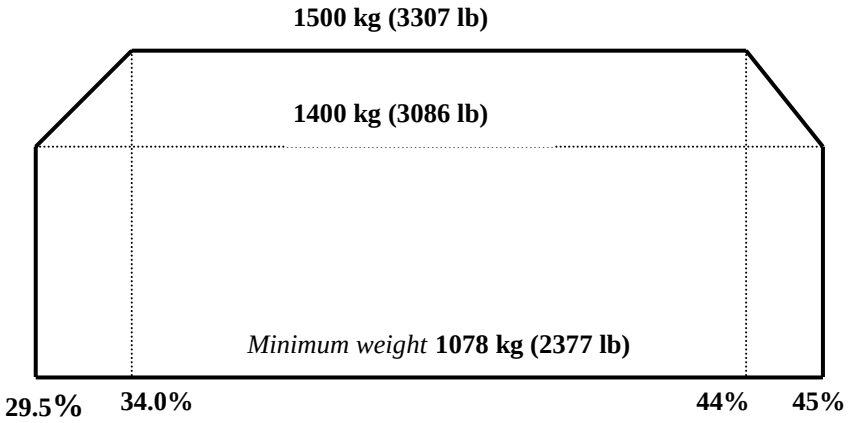
C.G. range

Minimum front centre of gravity location:

Q = 1500 kg (3307 lb)	34.0 % MAC – 0.476 m (18.74 in) aft of datum
Q ≤ 1400 kg (3086 lb)	29.5 % MAC – 0.413 m (16.3 in) aft of datum
	linear variation between these points

Maximum rear centre of gravity location:

Q = 1500 kg (3307 lb)	44.0 % MAC – 0.616 m (24.25 in) aft of datum
Q ≤ 1400 kg (3086 lb)	45.0 % MAC – 0.630 m (24.8 in) aft of datum
	linear variation between these points
Length of MAC	1.4 m (55.1 in.)
Position of leading edge of MAC aft of datum	0.0 m (0.0 in.)



Datum

A plane tangent to the leading edge of the wing slat and perpendicular to the mean aerodynamic chord (MAC)

Leveling Means: Acc. to rigging points, elevation of point **6** over point **5**: 680 mm (26.8 in.) (refer to AFM section 6.1)

Minimum crew: 1 (pilot)

Number of seats: 4 (2 front and 2 rear)

Maximum Baggage: 66 lb. (30 kg) in baggage compartment.

Control surface movements

Aileron	Up	26° (± 2°)	Down	16° (± 2°)
Elevator	Up	38° (± 1°)	Down	18° (± 2°)
Elevator trim tab	Up	20° (± 2°)	Down	20° (± 2°)
Rudder	Left	22° (± 1°)	Right	22° (± 1°)
Flaps	take-off	21° (± 2°)	landing	44° (± 2°)

Wheels and Tires

Main wheel	CLEVELAND 40-75D
Main wheel tire/size	GOODYEAR 8.00-6TT 486 x 191 mm (19.1 x 7.5 in.) or 8.50-6TT 549 x 218 mm (21.6 x 8.6 in.)
Tail wheel/size	STOMIL 255 x 110 mm (10.0 x 4.3 in.)

Glider and banner towing

		(IAS)	(CAS)
Minimum towing speed gliders	δ_{KL} = 0°	125 km/h (67 kts)	124 km/h (67 kts)
	δ_{KL} = 21°	110 km/h (59 kts)	108 km/h (58 kts)
Maximum towing speed	δ_{KL} = 0°	165 km/h (89 kts)	167 km/h (90 kts)

Maximum take-off and landing weight of the airplane	1400 kg (3086 lb.)
Maximum total weight of airplane + glider system	1890 kg (4167 lb.)
Maximum number of gliders towed	2
Maximum number of persons aboard	2 (on front seats)
Safety link between the rope and the towing hook with the breaking force not more than	9320 N (950 kg) (2094 lb)

DATA PERTINENT TO ALL MODELS

Serial numbers eligible: See “Import Requirements.”

Import Requirements: The FAA can issue a U.S. airworthiness certificate based on an NAA Export Certificate of Airworthiness (Export C of A) signed by a representative of the Civil Aviation Office (CAO) of Poland on behalf of the European Community. The Export C of A should contain the following statement: ‘The aircraft covered by this certificate has been examined, tested, and found to comply with U.S. airworthiness regulations 14 CFR Federal Aviation Regulations Part 23, U.S. Type Certificate No. A55EU and to be in a condition for safe operation.’

Refer to the applicable bilateral agreement to verify eligibility for import into the United States of both new and used aircraft based on the scope of the agreement, to identify any required statements by the exporting authority on the export certificate of airworthiness (or equivalent document), and for procedures for coordinating exceptions to conformity statements on these documents. Refer to FAA Order 8130.2, *Airworthiness Certification of Aircraft*, for requirements for issuance of an *airworthiness certificate* for imported aircraft.

Certification Basis

For Model PZL-104 Wilga 80
FAR 21.29 using the airworthiness requirements of FAR Part 23 effective 1 February 1965, including Amendments 23-1 through 23-20. Compliance has been shown with FAR 36, Amendments 36-1 through 36-12. Type Certificate No. A55EU issued March 12, 1987. Effective date of application for Type Certificate per FAR 21.17 (c)(2) December 5, 1980.For Model PZL-104M Wilga 2000
FAR 21.29 using the airworthiness requirements of FAR Part 23 dated February 1, 1965, as amended through Amendment 23-20 effective September 1, 1977;
FAR Part 23 Subpart B as amended through Amendment 23-45 effective September 7, 1993;
FAR Part 23 Subparts E and F as amended through Amendment 23-30 effective March 29, 1984;
FAR Part 23 Appendices F and G as amended through Amendment 23-34 effective February 17, 1987.
Compliance has been shown with FAR 36, Amendments 36-1 through 36-22.
Amended Type Certificate No. A55EU rev. 1 issued February 25, 2002. Effective date of application for Amended Type Certificate October 2, 1996.

For Model PZL-104MA Wilga 2000
FAR 21.29 using the airworthiness requirements of FAR Part 23 dated February 1, 1965, as amended through Amendment 23-20 effective September 1, 1977;
FAR Part 23 Subpart B as amended through Amendment 23-45 effective September 7, 1993;
FAR Part 23 Subparts E and F as amended through Amendment 23-30 effective March 29, 1984;
FAR Part 23 Appendices F and G as amended through Amendment 23-34 effective February 17, 1987.
Compliance has been shown with FAR 36, Amendments 36-1 through 36-27 effective September 6, 2005.

Amended Type Certificate No. A55EU rev. 4 issued June 12, 2006.
Date of application for Amended Type Certificate for model PZL-104MA is November 28, 2005.

The Civil Aviation Office (CAO) of Poland originally type certificated these aircraft models under its type certificate Number BB-130. The FAA validated this product under U.S. Type Certificate Number A55EU. Effective November 16, 2005, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of Poland. The EASA TCDS number is EASA.A.061.

Equipment

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

For Model PZL-104 Wilga 80: Approved Airplane Flight Manual dated June 15, 1979, or later approved revisions, signed by the Polish CACA (or CAIB) is required. (See below – Service Information section)

For Model PZL-104M Wilga-2000: CAIB Approved Airplane Flight Manual dated September 15, 1999 or later CAIB approved revision is required. (See below – Service Information section)

For Model PZL-104M Wilga-2000 with optional propeller per EADS PZL SB No. 104M03037: CAIB Approved Airplane Flight Manual, Revision No. 18, dated April 22, 2003 or later CAIB approved revision is required. (See below – Service Information section)

For Model PZL-104MA Wilga-2000: CAO/EASA Approved Airplane Flight Manual,

document No. WMA-01-US, dated May 2006 or later CAO/EASA approved revision is required. (See below – Service Information section)

Service Information

For Model PZL-104 Wilga 80: Section 25 of the Maintenance Instruction for the PZL-104 Wilga 80 aircraft and all mandatory service bulletins that indicate applicability to the U.S. approved Model PZL-104 Wilga 80 and are approved by the CACA (or CAIB) and include a statement to that effect, may be interpreted as FAA approved. (See below)

For Model PZL-104M Wilga 2000: Instructions for Continued Airworthiness for the PZL-104M Wilga 2000 aircraft and all mandatory service bulletins that indicate applicability to the U.S. approved Model PZL-104M Wilga 2000 and are approved by the General Inspectorate of Civil Aviation (GICA) and include a statement to that effect, may be interpreted as FAA approved. (See below)

For Model PZL-104MA Wilga 2000: Instructions for Continued Airworthiness (ICA) for the PZL-104MA Wilga 2000 aircraft and all mandatory service bulletins that indicate applicability to the U.S. approved Model PZL-104MA Wilga 2000 and are approved by the CAO/EASA and include a statement to that effect, may be interpreted as FAA approved. (See below) The required ICA for the PZL-104MA Wilga 2000 are contained in PZL-104MA Wilga 2000 Maintenance Manual, document No. WMA-02-US, dated May 16, 2006 or later CAO approved revision.

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before November 16, 2005 – by the Civil Aviation Office (CAO) of Poland. (See Note 5)

- Service bulletins,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.

The FAA accepts such documents and considers them FAA-approved for type design data only unless one of the following conditions exists:

- The documents change the limitations, performance, or procedures of the FAA approved manuals; or

- The documents make an acoustical or emissions changes to this product's U.S. type certificate as defined in 14 CFR § 21.93.

The FAA uses the post type validation procedures to approve these documents. The FAA may delegate on case-by-case to EASA to approve on behalf of the FAA for the U.S. type certificate. If this is the case it will be noted on the document.

NOTES:

Note 1 Weight and Balance:
A current Weight and Balance Report must be in each aircraft at the time of original airworthiness certification and at all times afterwards.

For Model PZL-104 Wilga 80:
Unusable fuel in the fuel tank is 0.52 U.S. gallons (moment arm 13.8 inches aft of datum.)
Undrainable oil in the system is 0.132 U.S. gallons (moment arm 13.43 inches aft of datum)

For Model PZL-104M Wilga-2000 and Model PZL-104MA Wilga 2000
The certificated empty weight and corresponding center of gravity location must include full oil of 12.0 U.S. quarts (23.1lbs at 41.54 in. forward of datum) and unusable fuel in each fuel tank of 1.60 U.S. gallons (moment arm 16.5 in. aft of datum).

Note 2 All placards required in the Limitations section of the CAO/EASA approved Airplane Flight Manual must

be installed in the appropriate locations.

Note 3 Instructions for Continued Airworthiness and Service Life Limits of components are contained:

For Model PZL-104 Wilga 80: In the Maintenance Instruction for the PZL-104 Wilga Aircraft.

For Model PZL-104M Wilga-2000: In the PZL-104M Wilga 2000 Maintenance Manual.

For Model PZL-104MA Wilga-2000: In the PZL-104MA Wilga 2000 Maintenance Manual document No. WMA-02-US, dated May 16, 2006 or later revision.

Revisions to Airworthiness Limitations must be EASA and FAA approved.
All service bulletins classified as mandatory by the CAO/EASA are identified to that effect and may be subject to an Airworthiness Directive issued by the FAA.

Note 4 Serial number eligibility for the PZL-104 MAWilga 2000 model starts with manufacturer serial number 000050019, 00050021and up. The certification process has been run on airplane serial No. 00050019.

Note 5 The national airworthiness authority (NAA) for this airplane is the Civil Aviation Office (CAO) of Poland. The CAO was previously known as CAIB, CACA and General Inspectorate of Civil Aviation (GICA).

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