

Manufacturer: Lentokonekorjaamo Pankkonen, Nummenkylä, Finland
 Model: EP P127/87
 Diameter: 1270 mm (50 in) (both models)
 Type: Two-blade, wooden, fixed pitch propeller (both models)

Control Surface Movements

		Up	Down
Flaps		12° ± 1°	16° ± 1°
Ailerons	+16° flap	13° ^{+2°} _{-1°}	12,5° ^{+2°} _{-1°}
	0° flap	12° ^{+2°} _{-1°}	11° ^{+2°} _{-1°}
	-12° flap	11° ^{+2°} _{-1°}	9,5° ^{+2°} _{-1°}

Aileron neutral position travels with flaps up 12° ± 1° thru down 16° ± 1°

Elevator	Up 20° ± 1°	Down 20° ± 1°
Rudder	Right 33° ± 2°	Left 33° ± 2°

Airspeed Limits (I.A.S.)

Never exceed (V _{NE})	280 km/h	(174 mph, 151 kts)
In rough air (V _B)	215 km/h	(134 mph, 116 kts)
Maneuvering (V _A)	190 km/h	(118 mph, 103 kts)
In aero tow (V _T) *)	190 km/h	(118 mph, 103 kts)
In winch tow (V _W) *)	125 km/h	(78 mph, 67 kts)
With engine extended	195 km/h	(121 mph, 105 kts)
Extending and retracting the engine	135 km/h	(84 mph, 73 kts)

*) Aerotow and winch tow are allowed only if the original tow hook kit is installed. Winch tow is allowed only with the tow hook at rear station 1850 mm (72,8 in), see note 4.

With deflected flaps as follows:

δ_f °		+16	+12...+2	0...-12
	km/h	155	215	280
V	mph	96	134	174
	kts	84	116	151

C.G. Range 19 % to 44 % MAC, 2267 mm to 2443 mm (89.3 in to 96.2 in)
 Retracting the engine adds 16.5 kgm (1432 lb.in) to the mass moment.

Empty Weight C.G. Range None

Fuel Capacity	S/N:s 20203 to 20214 and 20216 to 20220: Total 33 litres (8,72 gall U.S.), of which usable 32 litres (8,45 gall U.S.) S/N:s 20215, 20221 to 20265 and 20267 to 20293: Total 29 litres (7,66 gall U.S.) of which usable 28 litres (7,40 gall U.S.), see note 4. Fuel tank is at position 1900 mm (74.8 in).
Datum	Vertical plane 2113 mm (83.19 in) forwards of the first wing fitting tube forward surface.
Levelling Means	Slope of rear top surface of fuselage between stations 4500 mm (177.2 in) and 5500 mm (216.5 in), 1000 to 28 tail down
No. of Seats	One adjustable seat, pilot's C.G. range 1420 mm to 1500 mm (56.0 in. to 59.0 in)
Fixed Ballast	1. Nose station 255 mm (10.0 in), max 10 kg (22 lbs) 2. Tail wheel spring station 6100 mm (240.2 in), max 3 kg (6.6 lbs) 3. In addition on S/N:s 20203 to 20227: Battery compartment station 3730 mm (146,8 in), max 11 kg (24 lbs) including battery Ballast attaching by bolts and nuts or inserts.
Rated Load on Winch and Aero Tow	6000 N (1320 lbs)

1.IV Operating and Service Instructions

Required Equipment

The basic required equipment as prescribed in the application airworthiness regulations (see Certification Basis) must be installed in the sailplane for standard airworthiness certification. In addition the following equipment must be installed:

1. Basic instruments and equipment
 - (a) Airspeed indicator
 - (b) Altimeter
 - (c) Magnetic compass
 - (d) Ball type slip indicator
 - (e) Tachometer
 - (f) Fuel quantity indicator
 - (g) Cylinder head temperature indicator
 - (h) Engine hourmeter
 - (i) Seat belts
 - (j) Seat cushion
 - (k) Mirror for checking the propeller position
2. Additional instruments for cloud flying
 - (a) Turn indicator
 - (b) Variometer
3. PIK-20 E Flight Manual approved by the National Board of Aviation, Finland.

Inspections, Maintenance, Repairs and Repainting must be accomplished in accordance with EIRI, Eino Riihelä Ky's PIK-20 E Flight Manual and Service Manual and PIK-20 E Repair Manual.

Major repairs must be performed in accordance with repair methods approved by EIRI, Eino Riihelä Ky.

1.V Notes, including serial number applicability

Note 1. The following placards and markings must be displayed in a conspicuous place on the sailplane:

a. Maximum Speeds, Weights and Operational Limits

i. S/N:s 20203 to 20214 and 20216 to 20220, same as the placard in ii), but without the winch tow limit.

ii. S/N:s 20215, 20221 to 20265 and 20267 to 20293:

Maximum speed

In calm weather (V_{NE})	280 km/h	174 mph	151 kts
In rough air (V_B)	215 km/h	134 mph	116 kts
Maneuvering (V_A)	190 km/h	118 mph	103 kts
On aero tow (V_T)	190 km/h	118 mph	103 kts
On winch tow (V_W)	125 km/h	78 mph	67 kts
With engine extended	195 km/h	121 mph	105 kts
Extending and retracting the engine	135 km/h	84 mph	73 kts

Weights

Gross weight 470 kg (1036 lbs) including water ballast.

If the pilot's weight with the parachute is below 70 kg (154 lbs) ballast weight must be installed in the nose (see Flight Manual and Weight and Balance Record).

Operational Limitations

This sailplane must be operated in compliance with the operating limits as stated in the form of markings, placards and in the PIK-20 E Flight Manual. All acrobatic maneuvers including spins must be accomplished in accordance with PIK-20 E Flight Manual

NO SMOKING

b.

Maximum airspeed with deflected flaps				
δ_f °		+16	+12...+2	0...-12
	km/h	155	215	280
V	mph	96	134	174
	kts	84	116	151

c. Other placards and markings

Adjacent to tow coupling	.....	RATED LOAD 6000 N (1320 lbs)
Above the main wheel	.....	2.5 bar (35 psi)
Adjacent to static pressure entry on fuselage skin	.....	STATIC PRESSURE KEEP CLEAR
Adjacent to oxygen control valve (if installed)	.....	DURATION TABLE
On fuselage nose (inside)	.....	BALLAST
Near the luggage compartment	.....	MAX RATED LOAD 15 kg (33 lbs)
Near the fuel filler opening		S/N:s 20203 to 20214 and 20216 to 20220: 2-STROKE FUEL OIL MIXTURE RATIO 1:40 MIN 96 OCTANE (RON) SUPER GASOLINE OR AVGAS 100 LL, USABLE CAPACITY 32 L. S/N:s 20215 and 20221 and up: same as above but USABLE CAPACITY 28 L
Near the fuel valve	.....	ON... OFF
Near the draining valve (S/N:s 20203 to 20214 and 20216 to 20220)	.....	DRAIN... OFF
Near the fuel tank vent (S/N:s 20215 and 20221 and up)	.....	VENT, KEEP CLEAN

The controls or handles for tow coupling release, canopy opening and jettisoning, landing gear, flaps, airbrakes, trim, pedals, ventilation, water ballast draining, engine doors, engine retracting mechanism, fuel cock and engine controls and switches must be equipped with unmistakable symbols or text placards.

The flight speed limitations must be marked on the air speed indicator in accordance with the Flight Manual.

Engine gauges must be marked in accordance with the Flight Manual.

- Note 2. Inspections, Maintenance, Repairs and Repainting must be accomplished in accordance with EIRI, Eino Riihelä Ky's PIK-20 E Flight Manual and Service Manual and PIK-20 E Repair Manual.
- Note 3. Major repairs must be performed in accordance with repair methods approved by EIRI, Eino Riihelä Ky.
- Note 4. On S/N:s 20215 and 20221 and up, the tow hook has been moved backwards to facilitate winch tow operations. Simultaneously the capacity of the fuel tank has been decreased and its vent and drain systems have been modified.

Modification of S/N:s 20203 to 20214 and 20216 to 20220 is feasible in accordance with EIRI, Eino Riihelä Ky's drawings No:s 0-20E-51-100a, 1-20E-31-001a and 3-20E-21-200-26a.

Variant 2 PIK-20E II

2.I General

POWERED SAILPLANE SPECIFICATION No.P-7

This specification which is a part of the Type Certificate No.P-7 prescribes conditions and limitations under which the product, for which the Type Certificate was issued, meets the Airworthiness Requirements of Finland.

Type Certificate Holder EIRI, Eino Riihelä Ky
Kisällinkatu 8
FI-15170 Lahti
Finland
(Formerly Holder: Eiriavion Oy)

2.II Certification Basis

OSTIV Airworthiness Requirements for Sailplanes, September 1976, Utility Category, Powered Sailplanes. German Airworthiness Requirements for Sailplanes and Powered Sailplanes (LFSM), October 1975, Utility Category, Powered Sailplanes.

ICAO Annex 16, Third Edition, Chapter 6, July 1978.

2.III Technical Characteristics and Operational Limitations

Model PIK-20 E II, Approved August 22, 1980

Serial Nos. eligible 20266, 20294 and up

Maximum Weight 470 kg (1036 lbs) including water ballast

Maximum weight of
Non-Lifting Parts 328 kg (723 lbs)

Water Ballast Two water ballast tanks at station 2270 mm (89.4 in). Tanks' capacity 40 kg (88 lbs) each.

Engine Manufacturer: Bombardier-Rotax GmbH, Gunskirchen, Austria
Model: Rotax 505
Type: Retractable, aircooled, 500 ccm, two-stroke, two-cylinder, dual-magneto ignition engine with 2:1 toothed belt transmission to the propeller
Max rpm: 6800
Max continuous rpm: 6000
Max available take-off power: 31,7 kW (43 hp) at 6200 rpm and 100 km/h (62 mph, 54 knots)

Fuel Two-stroke fuel. Normal automobile gasoline, min octane number 96, or aviation gasoline, AVGAS 100 LL, mixed with two-stroke super-quality oil. Mixture ratio 1:40

Propeller Manufacturer: Propellerwerk Hoffmann GmbH, Rosenheim, Federal Republic of Germany
Model: H0 11* - 127 B 87
Manufacturer: Lentokonekorjaamo Pankkonen, Nummenkylä, Finland
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With deflected flaps as follows:

δ_f °		+16	+12...+2	0...-12
	km/h	155	215	280
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Empty Weight C.G. Range None

Fuel Capacity Total 29 litres (7,66 gall U.S.) of which usable 28 litres (7,40 gall U.S.)
Fuel tank is at position 1900 mm (74.8 in).

Datum Vertical plane 2113 mm (83.19 in) forwards of the first wing fitting tube forward surface.

Levelling Means	Slope of rear top surface of fuselage between stations 4500 mm (177.2 in) and 5500 mm (216.5 in), 1000 to 28 tail down
No. of Seats	One adjustable seat, pilot's C.G. range 1420 mm to 1500 mm (56.0 in. to 59.0 in)
Fixed Ballast	1. Nose station 255 mm (10.0 in), max 10 kg (22 lbs) 2. Tail wheel spring station 6100 mm (240.2 in), max 3 kg (6.6 lbs) Ballast attaching by bolts and nuts or inserts.
Rated Load on Winch and Aero Tow	6000 N (1320 lbs)

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 - (h) Engine hourmeter
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 - (j) Seat cushion
 - (k) Mirror for checking the propeller position
2. Additional instruments for cloud flying
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Operational Limitations

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NO SMOKING

b.

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Near the fuel filler opening		2-STROKE FUEL OIL MIXTURE RATIO 1:40 MIN 96 OCTANE (RON) SUPER GASOLINE OR AVGAS 100 LL, USABLE CAPACITY 28 L.
Near the fuel valve	ON... OFF
Near the fuel tank vent	VENT, KEEP CLEAN

The controls or handles for tow coupling release, canopy opening and jettisoning, landing gear, flaps, airbrakes, trim, pedals, ventilation, water ballast draining, engine doors, engine retracting mechanism, fuel cock and engine controls and switches must be equipped with unmistakable symbols or text placards.

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Note 3. Major repairs must be performed in accordance with repair methods approved by EIRI, Eino Riihelä Ky.

Note 4. On S/N:s 20215 and 20221 and up, the tow hook has been moved backwards to facilitate winch tow operations. Simultaneously the capacity of the fuel tank has been decreased and its vent and drain systems have been modified.

SECTION 2: **Airworthiness Directives**

The following ADs and additional data can be found at
http://www.ilmailuhallinto.fi/PIK-20_support

Variant 1 **PIK-20E**

AD	Date	Heading	Ref.
746	1.8.1977	Safety belts (sn: all)	M15
	9.7.1979	Special requirement for the United Kingdom (sn: 20213, 20214, 20217, 20218)	M20E-2
	17.12.1979	Chafe of fuel tank (sn: 20215, 20221-20233, 20235)	M20E-3
	14.2.1980	Flughandbuch, Betriebs- und Wartungshandbuch	
	17.3.1980	Insufficient fuel flow (sn: 20103-20259)	M20E-4
	17.3.1980	Flight Manual	
	16.4.1980	Service Manual	
	14.10.1980	Saving battery power when soaring (sn: 20213, 20214, 20217-20265, 20267-20293)	H20E-1a
	6.11.1980	Warning system for the open engine doors (sn: 20203-20293)	H20E-2
	10.11.1980	Lubricating and removing the propeller drive gear bearings (sn: all)	H20E-3
	18.11.1980	Huolto-ohjekirja	
	20.11.1980	Auxiliary spring for safety cable (sn: 20203-20256)	H20E-4
	24.11.1980	Transfer of cylinder head temperature (CHT) sensor (sn: 20203-20248)	H20E-5
1200	31.10.1983	Inspection of the fuel system inlets (sn: all)	
1737-1	15.10.1990	Propeller hub mounting (sn: all)	LTA90-239

SECTION 3: **Occurrence Reporting**

The Specific Airworthiness Specification may be used as a basis for the issue of a Restricted Certificate of Airworthiness in accordance with 21A.173(b)(2) under the following conditions:

- a) The holder of a Restricted Certificate of Airworthiness based on this Specific Airworthiness Specification shall report to the State of Registry all information related to occurrences associated with the operation of the aircraft which affects or could affect the safety of operation¹.
- b) Such reports shall be despatched within 72 hours of the time when the occurrence was identified unless exceptional circumstances prevent this.
- c) The State of Registry shall forward the information received under (a) to the Agency when it relates to failures, malfunctions, defects or other occurrences which cause or might cause adverse effects on the continuing airworthiness of the aircraft.

¹ AMC 20-8 contains guidance describing the occurrences which are to be reported

SECTION 4: **Other Limitations**

[This is reserved for EASA use. Additional limitations may be necessary, as found necessary to reduce the risks associated with deficiencies in the reporting chain in Section 3. These may be based on the expectation that specific maintenance may be required due to aircraft ageing, etc.]