

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

G31EU
Revision 6
EIRIAVION OY
PIK-20
PIK-20B
PIK-20D
March 1, 2012

TYPE CERTIFICATE DATA SHEET NO. G31EU

This data sheet which is a part of the Type Certificate No. G31EU 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 EIRIAVION OY (formerly MOLINO OY)
38800 Jami jarvi
Finland

Type Certificate Ownership Record

- (1) **This TC was considered not valid by the state of design on August 22, 2007, and has been replaced by European Aviation Safety Agency (EASA) Specific Airworthiness Specification (SAS) numbers EASA.SAS.A.023, (for the models PIK-20 and PIK-20B) and EASA.SAS.A.024 (for the model PIK - 20D), issued August 22, 2007. Only standard airworthiness certificates issued prior to March 1, 2012 are valid.**
- (2) **Future unsafe conditions existing in the aircraft may result in the revocation of the airworthiness certificates of the aircraft if there is no entity to comply with 14 CFR § 21.99(a), "Required design changes."**
- (3) **Replacement parts may not be available in the future.**

I. Model PIK-20, approved June 20, 1975

Airspeed Limits (I.A.S.)	Never Exceed (VNE)	262 km/h	163 mph	142 kts
	Maximum speed in rough air (VB)	242 km/h	150 mph	131 kts
	Maneuvering (VA)	185 km/h	115 mph	100 kts
	On aerotow (VT)	185 km/h	115 mph	100 kts
	On winch tow (VW)	125 km/h	77 mph	67 kts
	Flaps-airbrakes deflected, 45° or less	262 km/h	163 mph	142 kts
	Flaps-airbrakes deflected, more than 45°	200 km/h	124 mph	108 kts
C.G. Range	20% to 40% MAC; 82.1 in. to 87.6 in. (2085 mm to 2225mm) aft of datum.			
Empty Weight c.g.	None.			
Datum	1900 mm (74.8 in.) forward of wing leading edge at wing root rib			
Leveling Means	Slope of rear top surface of fuselage between stations 140 in. and 180 in. 1000 to 28 tail down. (See Flight Manual, Service Manual Section 2).			
Maximum Weight	400 kg (880 lb) including water ballast. (See Note 8.)			
No. of Seats	One adjustable seat, pilot's C.G. range 1400 mm to 1460 mm; 55.2 in. to 57.5 in.			
Ballast, Fixed	Station 230 mm; 9 in. Max (See Flight Manual) Max 10 kg (22 lb.) lead plates, attaching by bolts and nuts or inserts.			

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Water Ballast	Two water ballast tanks at station 2130 mm (83.9 in.), each 40 kg (88-lb.) + 10°		
Control Surface Movements	Flaps-airbrakes	Up 8° ± 1°	Down 80° - 5°
	Ailerons	Up 25° ± 2°	Down 16° ± 2°
	Elevator	Up 20° ± 1°	Down 20° ± 1°
	Rudder	Right 27° ± 2°	Left 27° ± 2°
Rated Load on Winch and Aero. Tow	500 kg (1100 lb.)		
Serial Nos. Eligible	20004 thru 20067, 20074, 20076, 20077, and 20080 (See Import Requirements; Notes 6, 7, 8, and 9).		
	Only those aircraft serials holding a standard airworthiness certificate issued prior to March 1, 2012 are eligible.		

II. Model PIK-20B, approved January 15, 1976

Airspeed Limits (I.A.S.)	Never exceed (VNE)	262 km/h	163 mph	142 kts
	Maximum speed in rough air (VB)	242 km/h	150 mph	131 kts
	Maneuvering (VA)	185 km/h	115 mph	100 kts
	On Aerotow (VT)	185 km/h	115 mph	100 kts
	On winch tow (VW)	125 km/h	77 mph	67 kts
	Flaps-airbrakes deflected, 45° or less	262 km/h	163 mph	142 kts
	Flaps-airbrakes deflected, more than 45°	200 km/h	124 mph	108 kts
C.G. Range	20% to 40% MAC; 82.1 in. to 87.6 in. (2085 mm to 2225 mm) aft of datum.			
Empty Weight C.G. Range	None			
Datum	1900 mm (74.8 in.) forward of wing leading edge at wing root rib.			
Leveling Means	Slope of rear top surface of fuselage between stations 140 in. and 180 in. 1000 to 28 tail down. (See Flight Manual, Service Manual Section 2).			
Maximum Weight	450 kg (990 lb.) including water ballast.			
No. of Seats	One adjustable seat, pilot's C.G. range. 1400 mm to 1460 mm; 55.2 in. to 57.5 in.			
Fixed Ballast	Station 230 mm; 9 in. (See Flight Manual) Max 10 kg (22 lb.) lead plates, attaching by bolts and nuts or inserts.			
Water Ballast	Two water ballast tanks at station 2130 mm (83.9 in.) each 70 kg (154 lb.)			
Control Surface Movements	Flaps-airbrakes	Up 9° ± 2°	Down 80° + 10° - 5°	
	Ailerons	Up 21°-24° ± 2°	Down 21° - 17° ± 2°	
	Aileron neutral position travels with flaps-airbrakes	Up 9° ± 2°	thru Down 9° ± 2°	
	Elevator	Up 20° ± 1°	Down 20° ± 1°	
	Rudder	Right 27° ± 2°	Left 27° ± 2°	
	Rated Load on Winch and Aero Tow	500 kg (1100 lb.)		

Serial Nos. Eligible 20068 and up, except 20074, 20076, 20077, and 20080 (See Import Requirements; Notes 7, 8, 9, and 10).

Only those aircraft serials holding a standard airworthiness certificate issued prior to March 1, 2012 are eligible.

II. Model PIK-20D, approved January 13, 1977

Airspeed Limits (I.A.S.)	Never exceed (VNE)	292 km/h	181 mph	158 kts
	Maximum speed in rough air (VB) (with full water ballast or maximum gross weight)	240 km/h	149 mph	130 kts
	(without water ballast)	200 km/h	124 mph	108 kts
	(airspeed limit changes linearly depending on amount of water ballast)			
	Maneuvering (VA)	190 km/h	118 mph	103 kts
	On aerotow (VT)	190 km/h	118 mph	103 kts
	On winch tow (VW)	125 km/h	77 mph	67 kts
	Flaps down (VF)	150 km/h	93 mph	81 kts

C.G. Range 20% to 40% MAC; 82.1 in. to 87.6 in. (2085 mm to 2225 mm) aft of datum.

Empty Weight C.G. Range None.

Datum 1900 mm (74.8 in.) forward of wing leading edge at wing root rib.

Leveling Means Slope of rear top surface of fuselage between stations 3500 mm (140 in.) and 4500 mm (180 in.) 1000 to 28 tail down. (See Flight Manual, Service Manual Section 2.)

Maximum Weight 450 kg (990 lb.) including water ballast.

No. of Seats One adjustable seat, pilot's c.g. range 1400 mm to 1460 mm (55.2 in. to 57.5 in.)

Fixed Ballast Station 230 mm (9 in.) (See Flight Manual)
Max 10 kg (22 lb.) lead plates, attaching by bolts and nuts or inserts.

Water Ballast Two water ballast tanks at station 2130 mm (83.9 in.) each 70 kg (154 lb.)

Control Surface Movements		<u>Up</u>	<u>Down</u>
	Flaps	$12^{\circ} \pm 1^{\circ}$	$16^{\circ} \pm 1^{\circ}$
	+16° Flap	$13^{\circ} \pm 2^{\circ}$	$12.5^{\circ} \pm 2^{\circ}$
	Ailerons (0° Flap)	$12^{\circ} \pm 2^{\circ}$	$11^{\circ} \pm 2^{\circ}$
	(-12° Flap)	$11^{\circ} \pm 2^{\circ}$	$9.5^{\circ} \pm 2^{\circ}$
	(Aileron neutral position travels with flaps up $12^{\circ} \pm 1^{\circ}$ thru down $(6^{\circ} \pm 1^{\circ})$)	1°	1°
	Elevator	$20^{\circ} \pm 1^{\circ}$	$20^{\circ} \pm 1^{\circ}$
	Rudder	Right and Left $33^{\circ} \pm 2^{\circ}$	

Rated Load on Winch and Aero Tow 500 kg (1100 lb.)

Serial Nos. Eligible 20504 and up.
The National Board of Aviation of Finland (NBA) Certificate of Airworthiness for Export endorsed as noted below under "Import Requirements" must be submitted for each individual glider for which application for certification of airworthiness is made. (See Import Requirements; Notes 7, 8, 9, and 10)

Only those aircraft serials holding a standard airworthiness certificate issued prior to March 1, 2012 are eligible.

Data Pertinent to all Models

Certification Basis	<p>FAR 21.23 and FAR 21.29 effective February 1, 1965.</p> <p>Type Certificate No. G31EU Issued June 20, 1975. Date of Application for Type Certificate: June 24, 1974.</p>
Validation Basis	<p>Type Certificate No. G31EU issued in accordance to FAR 21.29(a)(1) in validation of the National Board of Aviation (NBA) of Finland certification of compliance with the International Scientific and Technical Organization for Sailplanes (OSTIV) airworthiness requirements for sailplanes dated September 1971 utility category for gliders and sailplanes.</p>
Required Equipment.	<p>The basic required equipment as prescribed in the applicable airworthiness regulations (as listed in Flight Manual Service Section 2) must be installed in the glider for standard airworthiness certification. In addition the following equipment must be installed: (See NOTE 11)</p> <ol style="list-style-type: none"> 1. Instruments (non-cloud flying) <ol style="list-style-type: none"> (a) Airspeed indicator (b) Altimeter (c) Magnetic compass 2. Additional instruments for cloud flying <ol style="list-style-type: none"> (a) Turn and slip indicator (b) Variometer 3. An accelerometer for aerobatic flying 4. PIK-20, PIK-20B, or PIK-20D Flight Manual (containing Flight and Service Manual approved by the National Board of Aviation, Finland. <p>The requirements for instruments are approved by National Board of Aviation in Finland according to the Master Equipment List of all PIK-20 models, dated January 20, 1977.</p>
Import Requirements	<p>None eligible after March 1, 2012.</p> <p>Previous to this date:</p> <p>A U.S. Standard Airworthiness Certificate may be issued on the basis of a Certificate of Airworthiness for Export signed by a representative of the National Board of Aviation of Finland (NBA), containing the following statement: "The glider covered by this certificate has been examined, tested, and found to conform to the type design approved under FAA Type Certificate G31EU and is in condition for safe operation".</p>

NOTE 1: Weight: Current weight and balance report including list of equipment in certificated empty weight, and loading instructions when necessary must be provided at the time of original certification.

NOTE 2: A. The following placards and markings must be displayed in full view of the pilot:

Applicable to PIK-20 and PIK-20B

(1) Maximum airspeed

	<u>km/h</u>	<u>mph</u>	<u>kts</u>
In calm weather (VNE)	262	163	142
In turbulent weather (VB)	242	150	131
Maneuvering (VA)	185	115	100
On aerotow (VT)	185	115	100
On winch tow (VW)	125	77	67
Flaps-airbrakes deflected, 45° or less	262	163	142
Flaps-airbrakes deflected, more than 45°	200	124	108

NOTE 2 (cont'd)

Applicable to PIK-20D

Maximum airspeed

In calm weather (VNE)	292	181	158
In rough air (VB)			
With full water ballast or 450 kg (990 lb.) flying weight	240	149	130
Without water ballast	200	124	108
Maneuvering (VA)	190	118	103
In aero tow (VT)	190	118	103
On winch tow (VW)	125	77	67
Down deflected flaps (VF)	150	93	81

(2) Weights

	<u>PIK-20</u>	<u>PIK-20B & 20D</u>
Gross weight including water ballast	400 kg (880 lb.)	450 kg (990 lb.)

If the pilot's weight with the parachute is below 75 kg (165 lb.) ballast weight must be installed in the nose (see Flight Manual and Weight and Balance Data Sheet)

(3) Preflight check

Applicable to PIK-20 and PIK-20B

Tail dolly	removed
Parachute	secured
Seat and pedals	adjusted
Safety belts	secured
Canopy	locked
Altimeter	set
Flaps-airbrakes	in takeoff position(8° up)
Trim	set for takeoff
Tow rope	coupled in
Controls	free

Applicable to PIK-20D

Tail dolly	removed
Barograph (if installed)	on
Loading and ballast	checked
Parachute	secured
Seat and rudder pedals	adjusted
Safety belts	secured
Canopy	locked
Altimeter	set
Electrical instruments	on
Flaps	in takeoff position
Airbrakes	closed and locked
Trim	Set for takeoff
Tow rope	coupled on
Controls	free

(4) Before landing

	<u>PIK-20</u>	<u>PIK-20B</u>	<u>PIK-20D</u>
Water ballast	-	drained	drained
Landing gear	down	down	down
Flaps	as desired	as desired	12°...16° down
Trim	-	-	set for landing

NOTE 2 (cont'd)

(5) Operating limitations

This sailplane must be operated in compliance with the operating limitations as stated in the form of markings, placards and Flight Manual.

Cloud flying is only permitted when the following instruments are installed: airspeed indicator, altimeter, magnetic compass, turn and slip indicator and variometer.

Approved aerobatic maneuvers, maximum entry speeds and maximum load factors:

Applicable to PIK-20 and PIK-20B

<u>Maneuver</u>	<u>Entry speed</u>		
	<u>km/h</u>	<u>mph</u>	<u>kts</u>
Steep turn	185	115	100
Looping	185	115	100
Lazy eight	185	115	100
Chandelle	185	115	100
Stall turn	185	115	100
Spin	Use slow deceleration		
Stall (except whip stall)	Use slow deceleration		
Maximum load factors	+5.3	-2.65	
Maximum positive load factor, flaps-airbrakes deflected more than 45°	+4.0		
Aerobatic maneuvers prohibited with flaps-airbrakes deflected more than 45°			

All aerobatic maneuvers including spins must be accomplished in accordance with the approved PIK-20 or PIK-20B Flight Manual. Accelerometer must be installed.

Night flying prohibited.

Applicable to PIK-20D

Refer to PIK-20D Airplane Flight Manual for approved aerobatic maneuvers, flight load factors and related operating limitations.

Night flying prohibited.

B. Other Markings or Placards

Applicable to PIK-20, PIK-20B, PIK-20D

Near the tow coupling	Rated load 500 kg (1100 lb.)
Above the main wheel	2.5 Aty (35 p.s.i.)
Above the tail wheel	2.0 Aty (28 p.s.i.)

Applicable to PIK-20D

On fuselage nose (inside)	"BALLAST"
Adjacent to static pressure entry on fuselage skin	"STATIC PRESSURE KEEP CLEAR"
On rudder, elevator and flaps	"DO NOT PUSH"
Adjacent to oxygen control valve (if installed)	"DURATION TABLE"

NOTE 2:

The controls or handles for tow coupling release, canopy opening and jettisoning, landing gear, flaps airbrakes, trim tab, pedals, ventilating and water ballast draining must be equipped with unmistakable symbol or text placards.

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

The load factor limitations must be marked on the accelerometer with red radial lines.

- NOTE 3: Inspections, Maintenance, Repairs and Repainting must be accomplished in accordance with manufacturer's PIK-20, PIK-20B, or PIK-20D Flight Manual, Service Manual Section 2, and Repair Manual.
- NOTE 4: For painting exterior surfaces use only two component paints with ultra-violet protection as listed in Repair Manual.
- NOTE 5: Major repairs must be performed in accordance with manufacturer's repair methods and approved by NBA is not covered in Repair Manual.
- NOTE 6: PIK-20 Serial Numbers 20004 thru 200011 are eligible for Standard Airworthiness Certification only if the manufacturer's Service Bulletins M1 and M3 are accomplished.
- NOTE 7: Data plate for PIK-20 sailplane must be installed in accordance with manufacturer's Service Bulletin M2.
- NOTE 8: Sailplanes S/Ns 20004 thru 20067, 20074, 20076, 20077, and 20080 are eligible for a maximum weight of 450 kg (990 lb.) when enlarged water ballast tanks are installed per manufacturer's PIK-20 drawings Nos. 704B and 704-05.
- NOTE 9: Aileron control system of PIK-20 sailplanes S/N 20004 thru 20067, 20074, 20076, 20077, and 20080 may be modified to PIK-20B control surface movements per manufacturer's Service Bulletin M9.
- NOTE 10: PIK-20B sailplanes which bear the letter "C" after serial number (E.G. 20127C) have wing spar flanges which incorporate carbon fiber elements as the reinforcing agent and as such eligible for standard airworthiness certification based on the basic serial number effectivity noted hereon.
- NOTE 11: For required instrument installation, refer to Master Equipment List (Instruments) which contains a list of the installed instruments approved during initial type certification testing, and information concerning acceptable alternate replacement instruments.
- NOTE 12: Tailplane and rudder of sailplanes S/Ns 20566 and up have been modified according to manufacturer's Drawings Nos. 0-20D-52-100a, 1-20D-53-100b, 1-20D-58-100b and 1-20D-59-100c.

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