

Civil Aviation Authority Czech Republic

CAA CZ

**TYPE-CERTIFICATE
DATA SHEET**

L 13 SW Vivat

Type Certificate Holder:

EVEKTOR, spol. s r.o.

Letecká 1008
686 04 Kunovice
CZECH REPUBLIC

Manufacturer:

Aerotechnik – podnik ÚV Svazarmu

Letiště Kunovice
686 04 Kunovice
CZECHOSLOVAKIA

AEROTECHNIK CZ s.r.o.

Letiště Kunovice
686 04 Kunovice
CZECH REPUBLIC

For variants: L 13 SW Vivat
L 13 SE Vivat

Issue 4: August 01, 2005

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SECTION A1: GENERAL, L 13 SW Vivat Type Design

A1. General

Data Sheet No.: 82-01	Issue: 4	Date: August 01, 2005
1. a) Type:	L 13 SW Vivat	
b) Variant:	L 13 SW Vivat	
2. Airworthiness Category:	Utility	
3. Type Certificate Holder:	EVEKTOR, spol. s r.o. Letecká 1008 686 04 Kunovice CZECH REPUBLIC	
4. Manufacturer:	Aerotechnik – podnik ÚV Svazarmu Letiště Kunovice 686 04 Kunovice CZECHOSLOVAKIA	
5. Certification Application Date:	-	
6. CAA CZ Certification Date:	March 17, 1982	

AII. Certification Basis

1. Reference Date for determining the applicable requirements:	---
2. Certification Basis:	---
3. Airworthiness Requirements:	L 8/0 Airworthiness Regulation for Powered Gliders valid since July 1, 1976
4. Requirements elected to comply:	None
5. Special Conditions:	None
6. Exemptions:	None
7. Equivalent Safety Findings:	None
8. Environmental Standards:	ICAO Annex 16 and LSL Noise Regulations, valid from January 1, 1989 including Change II-69/90

AIII. Technical Characteristics and Operational Limitations

1. Type Design Definition:	List of drawings L13SW for powered sailplane L13SW Vivat, condition to January 15, 1982 or later CAA CZ approved revision.
2. Description:	L 13 SW Vivat is all-metal powered sailplane with two seats of side-by-side arrangement. The wing is

equipped with the air brakes on upper and lower surface and with the flaps. Retractable single wheel main landing gear, steerable tail wheel and retractable outriggers. Wing span 16.8 m.

3. Equipment:

Minimum equipment:

- 1 Airspeed indicator
- 1 Altimeter
- 1 Vertical speed Ind.
- 1 Compass
- 1 Turn Ind.
- 1 Fuel gauge
- 1 Fuel wire-gauge
- 1 Tachometer
- 1 Oil thermometer
- 1 Oil pressure Ind.
- 1 CHT
- 1 AP-6 Pressure gauge of Nitrogen overpressure in the wing spar flange, or a Mechanical indicator of Nitrogen pressure in flange.
- 2 Three-point safety harness

4. Dimensions:

Span	16.8 m
Length	8.3 m
Height	2.3 m
Wing Area	20.2 m ²

5. Engine:

5.1 Model:

Walter Mikron III S or Mikron III A

5.2 Type Certificate:

- SLI CSSR (State Aviation Inspection of Czechoslovak Socialist Republic)
TC No. 81-02, issued December 16, 1981 (IIIS)
- CAA CSFR (Czech and Slovak Federative Republic)
TC No. 92-05, issued July 24, 1992 (IIIA)

5.3 Limitations:

Takeoff Power	48 kW
Max. Continuous Power	48 kW
Cruising Power	35 kW
Max. Engine RPM	2800 RPM (max. 3 s!)
Max. Continuous RPM	2600 RPM
Idle RPM	600-700 RPM
Max. Cylinder Head Temperature	260°C (5 min)
Min. Cylinder Head Temperature	70°C
Max. Oil Pressure	500 kPa
Min. Oil Pressure	150 kPa
Max. Oil Temperature	120°C
Min. Oil Temperature	40°C

6. Propeller:

6.1 Model:

Ho-V 62R or V 218B

~~6.2~~ Type Certificate:

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Ho-V 62R	- LBA TC No. 32.130/13, issued on September 20, 1972
	- CAA CSFR TAC No. 92-22, issued on September 3, 1992
V 218B	- CAA CSFR TC No. 81-03, issued on December 16, 1981
6.3 Number of Blades:	2
6.4 Diameter:	Ho-V 62R 1600 mm V 218B 1500 mm
6.5 Sense of Rotation	left (anticlockwise)
7. Fluids:	
7.1 Fuel:	Unleaded aviation petrol min. 78 oct. Unleaded car petrol min. 78 oct.
7.2 Oil:	Motor-car engine oil API performance rating SF minimum (viscosity accord to the Engine Oper. and Maint. Manual)
8. Air Speeds:	
Manoeuvring Speed V_A	160 km/h IAS
Never Exceed Speed V_{NE}	230 km/h IAS
Rough Air Speed V_{RA}	160 km/h IAS
Max. Flap Extended Speed V_{FE}	105 km/h IAS
Max. Landing Gear Operating Speed V_{LO}	140 km/h IAS
9. Operational Capability:	VFR day, cloud flying (engine off)
10. Maximum Weights:	
Maximum Takeoff weight:	705 kg
Maximum Weight of non-lifting parts:	440 kg
Empty Weight:	485 kg \pm 3%
Maximum baggage weight:	15 kg
11. Centre of Gravity Range:	24 % \div 38,5 % MAC (operating) [1216 - 1408 mm from Reference plane] 33 % \pm 2,5% MAC (empty motor-glider) [1331 \pm 32 mm from Reference plane]
12. Datum:	Firewall
13. Levelling Means:	The Reference plane is defined by the support points under the firewall. For weighing is the sailplane set to a horizontal position according to the leveling points 3 and 4 (defined by the Leveling Record).
14. Minimum Flight Crew:	1 (Pilot)
15. Maximum Passenger Seating Capacity:	1
16. Lifetime limitations:	Refer to Maintenance Manual

17. Other limitations:	Load factors	+5.3 G -2,65 G	
18. Deflection angles of control surfaces:	Aileron	up	$32^{\circ} \pm 2^{\circ}$
		down	$13^{\circ} \pm 2^{\circ}$
	Elevator	up	$32^{\circ} \pm 2^{\circ}$
		down	$22^{\circ} \pm 2^{\circ}$
	Air brakes	upper	$150 \text{ mm} \pm 10 \text{ mm}$
		lower	$130 \text{ mm} \pm 10 \text{ mm}$
	Rudder to both sides	$30^{\circ} \pm 2^{\circ}$	
	Flaps	$3^{\circ}30' \pm 1^{\circ}$	

AIV. Operating and Service Instructions

1. Flight Manual: Flight Manual - Issue September, 1987 or later CAA CZ approved revision
2. Operating and Maintenance Manual:
 - Powered sailplane Doc.No. SW Vivat 13.911-0, Technical Description, Operating and Maintenance Manual of Powered Sailplane – Issue December, 1983 or later approved revision
 - Engine Mikron III S Operating and Maintenance Manual, 1st Issue, 1985 or later approved revision
 - Engine Mikron III A Operating and Maintenance Manual, 1st Issue, 1985 + Supplement 1, April 1, 1988 or later approved revision
 - Propeller Owner's Manual NR. E 0107.72, Feathering Propeller Models Ho-V 62, Ho-V 62R
 - Propeller V 218B Aircraft propeller Technical Description and Operating Instructions , Issue June, 1997

AV. Notes

1. EASA TC No. EASA.A.046 was issued for model L 13 SW Vivat aircraft on 12.08.2005.

SECTION A2: Reserved

SECTION B1: GENERAL, L 13 SE Vivat Type Design

B1. General

Data Sheet No.: 82-01	Issue: 4	Date: August 01, 2005
1. a) Type:	L 13 SW Vivat	
b) Variant:	L 13 SE Vivat	
2. Airworthiness Category:	Utility	
3. Type Certificate Holder:	EVEKTOR, spol. s r.o. Letecká 1008 686 04 Kunovice CZECH REPUBLIC	
4. Manufacturer:	Aerotechnik – podnik ÚV Svazarmu Letiště Kunovice 686 04 Kunovice CZECHOSLOVAKIA All S/N except S/N 970529, 980611, 980621 AEROTECHNIK CZ, s.r.o. Letiště Kunovice 686 04 Kunovice CZECH REPUBLIC S/N 970529, 980611, 980621	
5. Certification Application Date:	---	
6. CAA CZ Certification Date:	April 20, 1989	

BII. Certification Basis

1. Reference Date for determining the applicable requirements:	---
2. Certification Basis:	---
3. Airworthiness Requirements:	L 8/0 Airworthiness Regulation for Powered Gliders valid since July 1, 1976
4. Requirements elected to comply:	None
5. Special Conditions:	None
6. Exemptions:	None
7. Equivalent Safety Findings:	None
8. Environmental Standards:	ICAO Annex 16 and LSL Noise Regulations, valid from January 1, 1989 including Change II-69/90

BIII. Technical Characteristics and Operational Limitations

1. Type Design Definition: List of drawings L13SE for powered sailplane L13SE Vivat, condition to February 8, 1982 or later CAA CZ approved revision.
2. Description: L 13 SE Vivat is all-metal powered sailplane with two seats of side-by-side arrangement. The wing is equipped with the air brakes on upper and lower surface and with the flaps. Retractable single wheel main landing gear, steerable tail wheel and retractable outriggers. Wing span 16.8 m. The sailplane is equipped by the alternator and the electric starter of the engine.
3. Equipment:
Minimum equipment:
 - 1 Airspeed indicator
 - 1 Altimeter
 - 1 Vertical speed Ind.
 - 1 V-A meter
 - 1 Compass
 - 1 Turn Ind.
 - 1 Shunt
 - 1 Fuel gauge
 - 1 Fuel wire-gauge
 - 1 Tachometer
 - 1 Oil thermometer
 - 1 Oil pressure Ind.
 - 1 CHT
 - 1 AP-6 Pressure gauge of Nitrogen overpressure in the wing spar flange, or a Mechanical indicator of Nitrogen pressure in flange.
 - 2 Three-point safety harness
4. Dimensions:

Span	16.8 m
Length	8.3 m
Height	2.3 m
Wing Area	20.2 m ²
5. Engine:
 - 5.1.1 Model: Mikron III AE
 - 5.1.2 Type Certificate: CAA CSFR (Czech and Slovak Federative Republic) TC No. 92-05, issued July 24, 1992
 - 5.1.3 Limitations:

Takeoff Power	48 kW
Max. Continuous Power	48 kW
Cruising Power	35 kW
Max. Engine RPM	2800 RPM (max. 3 s!)
Max. Continuous RPM	2600 RPM
Idle RPM	600-700 RPM
Max. Cylinder Head Temperature	260°C (5 min)
Min. Cylinder Head Temperature	70°C
Max. Oil Pressure	500 kPa

Min. Oil Pressure	150 kPa
Max. Oil Temperature	120°C
Min. Oil Temperature	40°C

- 5.2.1 Model: Mikron III B
- 5.2.2 Type Certificate: CAA CSFR TC No. 92-05, issued July 24, 1992 + supplement 1, issued May 5, 1996
- 5.2.3 Limitations:
- | | |
|--------------------------------|----------------------|
| Takeoff Power | 55 kW (max. 5min) |
| Max. Continuous Power | 51 kW |
| Cruising Power | 37 kW |
| Max. Engine RPM | 2800 RPM (max. 3 s!) |
| Max. Continuous RPM | 2600 RPM |
| Idle RPM | 600-700 RPM |
| Max. Cylinder Head Temperature | 260°C (5 min) |
| Min. Cylinder Head Temperature | 70°C |
| Max. Oil Pressure | 500 kPa |
| Min. Oil Pressure | 150 kPa |
| Max. Oil Temperature | 120°C |
| Min. Oil Temperature | 40°C |

6. Propeller:

6.1 Model: Ho-V 62R or V 218B

~~6.2~~ Type Certificate:

Ho-V 62R

- LBA TC No. 32.130/13, issued on September 20, 1972
- CAA CSFR TAC No. 92-22, issued on September 3, 1992

V 218B

- CAA CSFR TC No. 81-03, issued on December 16, 1981

6.3 Number of Blades: 2

6.4 Diameter:

Ho-V 62R	1600 mm
V 218B	1500 mm

6.5 Sense of Rotation left (anticlockwise)

7. Fluids:

7.1 Fuel:

Unleaded aviation petrol	min. 78 oct.
Unleaded car petrol	min. 78 oct.

7.2 Oil: Motor-car engine oil API performance rating SF minimum (viscosity accord to the Engine Oper. and Maint. Manual)

8. Air Speeds:

Manoeuvring Speed V_A	160 km/h IAS
Never Exceed Speed V_{NE}	230 km/h IAS
Rough Air Speed V_{RA}	160 km/h IAS
Max. Flap Extended Speed V_{FE}	105 km/h IAS
Max. Landing Gear Operating Speed V_{LO}	140 km/h IAS

9. Operational Capability:	VFR day, cloud flying (engine off)		
10. Maximum Weights:			
Maximum Takeoff weight:	705 kg		
Maximum Weight of non-lifting parts:	440 kg		
Empty Weight:	485 kg \pm 3%		
Maximum Baggage Weight	15 kg		
11. Centre of Gravity Range:			
	24 % \div 38,5 % MAC (operating)		
	[1216 - 1408 mm from Reference plane]		
	33 % \pm 2,5% MAC (empty motor-glider)		
	[1331 \pm 32 mm from Reference plane]		
12. Datum:			
	Firewall		
13. Levelling Means:			
	The Reference plane is defined by the support points under the firewall. For weighing is the sailplane set to a horizontal position according to the leveling points 3 and 4 (defined by the Leveling Record).		
14. Minimum Flight Crew:			
	1 (Pilot)		
15. Maximum Passenger Seating Capacity:			
	1		
16. Lifetime limitations:			
	Refer to Maintenance Manual		
17. Other limitations:			
	Load factors	+5.3 G -2,65 G	
18. Deflection angles of control surfaces:			
	Aileron	up down	32° \pm 2° 13° \pm 2°
	Elevator	up down	32° \pm 2° 22° \pm 2°
	Air brakes	upper lower	150 mm \pm 10 mm 130 mm \pm 10 mm
	Rudder to both sides		30° \pm 2°
	Flaps		3°30' \pm 1°
	Trim tab	up down	12° \pm 1° 35° \pm 1°

BIV. Operating and Service Instructions

1. Flight Manual:
 - L 13 SE Vivat with Mikron III AE engine Flight Manuals – issue September, 1989 or later CAA CZ approved revision
 - Doc. No. 721931, L 13 SE Vivat with Mikron III B engine Flight manuals – issue June, 1998 or later CAA CZ approved revision
2. Operating and Maintenance Manual:
 - Powered sailplane, Mikron III AE engine Technical Description, Operating and Maintenance Manual of Powered Sailplane - Issue October, 1989 or later approved revision
 - Powered sailplane, Mikron III B engine Doc. No. 730941, Technical Description, Operating and Maintenance Manual of Powered Sailplane issue August, 1993 + Supplement 1, issue May, 1996 or later approved revision
 - Engine Doc.No. 610901, Mikron III AE Operating and Maintenance Manual issue May, 1992 or later approved revision
 - Engine Doc.No. 620901, Mikron III B Operating and Maintenance Manual, issue February, 1996 or later approved revision
 - Propeller Owner's Manual NR. E 0107.72, Feathering Propeller Models Ho-V 62, Ho-V 62R
 - Propeller V 218B Aircraft propeller Technical Description and Operating Instructions , Issue June, 1997

BV. Notes

1. EASA TC No. EASA.A.046 was issued for model L 13 SE Vivat aircraft on 12.08.2005.

SECTION B2: Reserved