

## *European Aviation Safety Agency*

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**EASA**

**TYPE-CERTIFICATE  
DATA SHEET**

**L 13 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  
CZECH REPUBLIC

**Aerotechnik s.r.o.**

Letiště Kunovice  
686 04 Kunovice  
CZECH REPUBLIC

**AEROTECHNIK CZ s.r.o.**

Letiště Kunovice  
686 04 Kunovice  
CZECH REPUBLIC

For variants:      L 13 SW Vivat  
                          L 13 SE Vivat  
                          L 13 SEH Vivat  
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**SECTION A1: GENERAL, L 13 SW Vivat Type Design**

**A1. General**

Data Sheet No.: EASA.A.046	Issue: 01	Date: 12 August 2005
1. a) Type:	L 13 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	
7. EASA Type Certification Date:	12 August 2005 (see Note 1)	
8. The EASA Type Certificate replaces Czech Type Certificate No. 82-01		

**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. EASA Special Conditions:	None
6. EASA Exemptions:	None
7. EASA Equivalent Safety Findings:	None
8. EASA 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 <sup>2</sup>
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:  
Ho-V 62R: - LBA TC No. 32.130/13, issued on September 20, 1972  
- CAA CSFR TAC No. 92-22  
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 EASA 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. This aircraft type was transferred to EASA on Accession of the Czech Republic ('grandfathered'). This TCDS has been raised to record the change in the TC holder.

**SECTION A2: Reserved**

**SECTION B1: GENERAL, L 13 SE Vivat Type Design**

**B1. General**

Data Sheet No.: EASA.A.046	Issue: 01	Date: 12 August 2005
1. a) Type:	L 13 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	
7. EASA Type Certification Date:	12 August 2005	
8. The EASA Type Certificate replaces Czech Type Certificate No. 82-01		

**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. EASA Special Conditions:	None
6. EASA Exemptions:	None
7. EASA Equivalent Safety Findings:	None
8. EASA 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 <sup>2</sup>
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<br>- 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° $\pm$ 2°
		down	13° $\pm$ 2°
	Elevator	up	32° $\pm$ 2°
		down	22° $\pm$ 2°
	Air brakes	upper	150 mm $\pm$ 10 mm
		lower	130 mm $\pm$ 10 mm
	Rudder to both sides		30° $\pm$ 2°
	Flaps		3°30' $\pm$ 1°
	Trim tab	up	12° $\pm$ 1°
		down	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 EASA approved revision

Doc. No. 721931, L 13 SE Vivat with Mikron III B engine  
Flight manuals – issue June, 1998 or later EASA  
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**

None

**SECTION B2: Reserved**

**SECTION C1: GENERAL, L 13 SEH Vivat Type Design**

**C1. General**

Data Sheet No.: EASA.A.046	Issue: 01	Date: 12 August 2005
1. a) Type:	L 13 Vivat	
b) Variant:	L 13 SEH 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 S/N 910420-910425, 930429-930438, 940516-940521  AEROTECHNIK s.r.o. Letiště Kunovice 686 04 Kunovice CZECH REPUBLIC S/N 950606	
5. Certification Application Date:	June 6, 1992	
6. CAA CZ Certification Date:	March 24, 1992	
7. EASA Type Certification Date:	12 August 2005 (see Note 2)	
8. The EASA Type Certificate replaces Czech Type Certificate No. 92-04		

**CII. Certification Basis**

1. Reference Date for determining the applicable requirements:	June 6, 1992
2. Certification Basis:	---
3. Airworthiness Requirements:	JAR-22, Sailplanes and Powered Sailplanes, Change 4, issued May 7, 1987
4. Requirements elected to comply:	None
5. EASA Special Conditions:	LBA preliminary direction for Certification of motorgliders electric equipment 334-MS90
6. EASA Exemptions:	None
7. EASA Equivalent Safety Findings:	None
8. EASA Environmental Standards:	ICAO Annex 16 and LSL Noise Regulations, valid from January 1, 1989 including Change II-69/90

### **CIII. Technical Characteristics and Operational Limitations**

1. Type Design Definition: List of Drawings for powered sailplane L 13 SEH VIVAT, condition to June 30, 1992 or later CAA CZ approved revisions.
2. Description: All-metal powered sailplane with two seats of side-by-side arrangement. Single wheel retractable main landing gear, tail wheel and retractable outriggers. Wing with airbrakes on upper and lower surface. The sailplanes of the S/N 930507, 930503 and lower are equipped with the wing flaps.
3. Equipment: Minimum equipment:
  - 1 Airspeed indicator (up to 300 km/h)
  - 1 Altimeter
  - 1 Vertical speed indicator
  - 1 Magnetic compass
  - 1 Tachometer with a Engine hours
  - 1 Fuel gauge
  - 1 Oil thermometer
  - 1 Oil pressure gauge
  - 1 Cylinder head thermometer
  - 1 V-A meter
  - 1 Nitrogen pressure gauge in the center-section flange
  - 2 Safety harness
4. Dimensions:

Span	16.8 m
Length	8.3 m
Height	2.3 m
Wing Area	20.2 m <sup>2</sup>
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	2860 RPM (max. 3 s!)
Max. Continuous RPM	2600 RPM
Idle RPM	500 RPM
Max. Cylinder Head Temperature	260°C (5 min)
Min. Cylinder Head Temperature	40°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 No.1, issued May 5, 1996 by CAA CZ

- |       |              |                                |                      |
|-------|--------------|--------------------------------|----------------------|
| 5.2.3 | Limitations: | Takeoff Power                  | 55 kW (max. 5min)    |
|       |              | Max. Continuous Power          | 51 kW                |
|       |              | Cruising Power                 | 37 kW                |
|       |              | Max. Engine RPM                | 2860 RPM (max. 3 s!) |
|       |              | Max. Continuous RPM            | 2600 RPM             |
|       |              | Idle RPM                       | 700 RPM              |
|       |              | Max. Cylinder Head Temperature | 250°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   |
| 6.2 | Type Certificate: | - LBA TC No. 32.130/13, issued on September 20, 1972<br>- Czechoslovak State Aviation Inspection TC No. 92-22, issued on September 3, 1992 |
| 6.3 | Number of Blades: | 2  |
| 6.4 | Diameter:         | Ho-V 62R 1600 mm   |
| 6.5 | Sense of Rotation | left (anticlockwise)   |
7. Fluids:
- |     |       |   |
|-----|-------|---|
| 7.1 | Fuel: | Unleaded aviation petrol min. 78 oct.<br>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 $V_{NE}$                | 205 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, cloud flying (engine off)
10. Maximum Weights:
- |                                      |                     |
|--------------------------------------|---------------------|
| Maximum Takeoff weight:              | 720 kg              |
| Maximum Tekeoff weight:              | 705 kg (see note 1) |
| Maximum Weight of non-lifting parts: | 440 kg              |
| Empty Weight:                        | 500 kg $\pm$ 3%     |
| Maximum Baggage Weight               | 20 kg               |
11. Centre of Gravity Range:
- |  |   |
|--|---|
| 24 % $\div$ 38.5 % MAC (operating)       | [1216 - 1401 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° ± 2° 13° ± 2°
	Elevator	up down	32° ± 2° 22° ± 2°
	Air brakes	upper lower	150 mm ± 10 mm 130 mm ± 10 mm
	Rudder to both sides		30° ± 2°
	Flaps		3°30' ± 1°

#### **CIV. Operating and Service Instructions**

1. Flight Manual:	Document No. 730931 2nd Edition, date of issue March, 1993, or later EASA approved revisions, valid for S/N 930504, 930505, 930512 and higher.  Without Doc.No. Date of Issue April, 1992, or later EASA approved revisions, valid for S/N 930507, 930503 and lower with wing flaps.  Document No. 731931, Date of Issue August, 1996 or later EASA approved revisions, valid for sailplanes with MIKRON III B engine installed.  Supplement 1, Date of Issue October, 1998 valid for S/N 930513 and 980621 equipped with the original L 13 SW wings instead of the L 23 SW ones.
2. Operating and Maintenance Manual:	
- Powered sailplane	Document No. 730941, Date of Issue August, 1993 or later approved revisions, valid for S/N 930504, 930505, 930512 and higher.
- Powered sailplane	Document No. 730911, Date of Issue February, 1992 or later approved revisions, valid for S/N 930507, 930503 and lower with the wing flaps.

- Powered sailplane	Document No. 730941-D1, Date of Issue May, 1996 or later approved revisions, valid for sailplanes with MIKRON III B engine installed.
- Powered sailplane	Supplement 1, Date of Issue October, 1998 valid for S/N 930513 and 980621 equipped with the original L 13 SW wings instead of the L 23 SW ones.
- Engine	Document No. 610901, Date of Issue May, 1992 or later approved revisions, valid for MIKRON III A engine and its versions.
- Engine	Document No. 620901, Date of Issue February, 1996 or later approved revisions, valid for MIKRON III B engine.
- Propeller	Owner's Manual NR. E 0107.72, Variable pitch propellers HO-V 62, HO-V 62R, 4th edition - August, 1982

**CV. Notes**

1. The sailplanes of the S/N 930513 and 980621 are equipped with the original L 13 SW wings instead of the L 23 SW ones; the maximum Take-off weight of these sailplanes is limited at 705 kg.
2. This aircraft type was transferred to EASA on Accession of the Czech Republic ('grandfathered'). This TCDS has been raised to record the change in the TC holder.

**SECTION C2: Reserved**

**SECTION D1: GENERAL, L 13 SDM Vivat Type Design**

**D1. General**

Data Sheet No.: EASA.A.046	Issue: 01	Date: 12 August 2005
1. a) Type:	L 13 Vivat	
b) Variant:	L 13 SDM 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 S/N 930515  AEROTECHNIK s.r.o. Letiště Kunovice 686 04 Kunovice CZECH REPUBLIC S/N 950607-950610  AEROTECHNIK CZ, s.r.o. Letiště Kunovice 686 04 Kunovice CZECH REPUBLIC S/N 950613-950615	
5. Certification Application Date:	-	
6. CAA CZ Certification Date:	September 15, 1995	
7. EASA Type Certification Date:	12 August 2005 (see Note 2)	
8. The EASA Type Certificate replaces Czech Type Certificate No. 92-04		

**DII. Certification Basis**

1. Reference Date for determining the applicable requirements:	---
2. Certification Basis:	---
3. Airworthiness Requirements:	JAR-22, Sailplanes and Powered Sailplanes, Change 4, issued May 7, 1987 including Amendment 22/92/1
4. Requirements elected to comply:	None

- |                                     |   |
|-------------------------------------|---|
| 5. EASA Special Conditions:         | LBA preliminary direction for Certification of motorgliders electric equipment 334-MS90       |
| 6. EASA Exemptions:                 | None  |
| 7. EASA Equivalent Safety Findings: | None  |
| 8. EASA Environmental Standards:    | ICAO Annex 16 and LSL Noise Regulations, valid from January 1, 1989 including Change II-69/90 |

### **DIII. Technical Characteristics and Operational Limitations**

- |                            |   |
|----------------------------|---|
| 1. Type Design Definition: | List of Drawings for powered sailplane L 13 SDM VIVAT, condition to May 1, 1994 or later CAA CZ approved revisions.   |
| 2. Description:            | All-metal powered sailplane with two seats of side-by-side arrangement. Fixed two-wheel landing gear with tail wheel. Wing with airbrakes on upper and lower surface.   |
| 3. Equipment:              | Minimum equipment:<br>1 Airspeed indicator (up to 300 km/h)<br>1 Altimeter<br>1 Vertical speed indicator<br>1 Magnetic compass<br>1 Tachometer with a Engine hours<br>1 Fuel gauge<br>1 Oil thermometer<br>1 Oil pressure gauge<br>1 Cylinder head thermometer<br>1 V-A meter<br>1 Nitrogen pressure gauge in the center-section flange<br>2 Safety harness |
| 4. Dimensions:             |   |
| Span                       | 16.8 m  |
| Length                     | 8.3 m   |
| Height                     | 2.3 m   |
| Wing Area                  | 20.2 m <sup>2</sup>   |
| 5. Engine:                 |   |
| 5.1.1 Model:               | Mikron III AE   |
| 5.1.2 Type Certificate:    | CAA CSFR TC No. 92-05, issued July 24, 1992   |
| 5.1.3 Limitations:         | Takeoff Power                   48 kW<br>Max. Continuous Power       48 kW<br>Cruising Power                35 kW<br>Max. Engine RPM               2860 RPM (max. 3 s!)<br>Max. Continuous RPM         2600 RPM<br>Idle RPM                        500 RPM  |

	Max. Cylinder Head Temperature	260°C (5 min)																								
	Min. Cylinder Head Temperature	40°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 No.1, issued May 5, 1996 by CAA CZ																								
5.2.3	Limitations:	<table border="0"> <tbody> <tr> <td>Takeoff Power</td> <td>55 kW (max. 5min)</td> </tr> <tr> <td>Max. Continuous Power</td> <td>51 kW</td> </tr> <tr> <td>Cruising Power</td> <td>37 kW</td> </tr> <tr> <td>Max. Engine RPM</td> <td>2860 RPM (max. 3 s!)</td> </tr> <tr> <td>Max. Continuous RPM</td> <td>2600 RPM</td> </tr> <tr> <td>Idle RPM</td> <td>700 RPM</td> </tr> <tr> <td>Max. Cylinder Head Temperature</td> <td>250°C (5 min)</td> </tr> <tr> <td>Min. Cylinder Head Temperature</td> <td>70°C</td> </tr> <tr> <td>Max. Oil Pressure</td> <td>500 kPa</td> </tr> <tr> <td>Min. Oil Pressure</td> <td>150 kPa</td> </tr> <tr> <td>Max. Oil Temperature</td> <td>120°C</td> </tr> <tr> <td>Min. Oil Temperature</td> <td>40°C</td> </tr> </tbody> </table>	Takeoff Power	55 kW (max. 5min)	Max. Continuous Power	51 kW	Cruising Power	37 kW	Max. Engine RPM	2860 RPM (max. 3 s!)	Max. Continuous RPM	2600 RPM	Idle RPM	700 RPM	Max. Cylinder Head Temperature	250°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
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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																								
6.2	Type Certificate:	-LBA TC No. 32.130/13, issued on September 20, 1972 -CAA CSFR TAC No. 92-22, issued on September 3, 1992																								
6.3	Number of Blades:	2																								
6.4	Diameter:	1600 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 $V_{NE}$	205 km/h IAS																								
	Rough Air Speed $V_{RA}$	160 km/h IAS																								
9.	Operational Capability:	VFR, cloud flying (engine off)																								
10.	Maximum Weights:																									
	Maximum Takeoff weight:	720 kg																								
	Maximum Takeoff weight:	705 kg (see note 1)																								
	Maximum Weight of non-lifting parts:	440 kg																								
	Empty Weight:	510 kg $\pm$ 3%																								
	Maximum Baggage Weight	15 kg																								



- Powered Sailplane	Document No. 730961-D2, Date of Issue April, 1996 or later approved revision, valid for powered sailplanes with MIKRON III B engine installed.
- Engine	Document No. 610901, Date of Issue April, 1992 or later approved revision valid for MIKRON III A engine and its versions.
- Engine	Document No. 620901, Date of Issue February, 1996 or later approved revision, valid for MIKRON III B engine.
- Propeller	Owner's Manual NR. E 0107.72, Variable pitch propellers HO-V 62, HO-V 62R, 4th edition - August, 1982

**DV. Notes**

1. The MTOW decreases from 720 kg to 705 kg by the change resulting from the substitution of original wings of the L 13 SDM by wings of the L 13 SW (CAA CZ TC No.82-01). The change could be provided by the manufacturer only.
2. This aircraft type was transferred to EASA on Accession of the Czech Republic ('grandfathered'). This TCDS has been raised to record the change in the TC holder.

**SECTION D2: Reserved**

**SECTION E1: GENERAL, L 13 SL Vivat Type Design**

**E1. General**

Data Sheet No.: EASA.A.046	Issue: 01	Date: 12 August 2005
1. a) Type:	L 13 Vivat	
b) Variant:	L 13 SL 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:	June 15, 1990	
6. CAA CZ Certification Date:	April 2, 1992	
7. EASA Type Certification Date:	12 August 2005 (see Note 1)	
8. The EASA Type Certificate replaces Czech Type Certificate No. 92-01		

**EII. Certification Basis**

1. Reference Date for determining the applicable requirements:	June 15, 1990
2. Certification Basis:	---
3. Airworthiness Requirements:	JAR-22, Sailplanes and Powered Sailplanes, Change 4, issued May 7, 1987
4. Requirements elected to comply:	None
5. EASA Special Conditions:	Preliminary directive LBA for certifying electrical equipment of powered gliders 334-MS90.
6. EASA Exemptions:	None
7. EASA Equivalent Safety Findings:	None
8. EASA Environmental Standards:	ICAO Annex 16 and LSL Noise Regulations, valid from January 1, 1989 including Change II-69/90

### **EIII. Technical Characteristics and Operational Limitations**

1. Type Design Definition:
  - List of drawings for powered sailplane L 13 SL Vivat, condition to March 31, 1992 or later CAA CZ approved revision.
  - List of drawings for powered sailplane L 13 SL Vivat, condition to July 31, 1993 or later CAA CZ approved revision, applicable for S/N 930510 and higher.
  
2. Description:

L 13 SL Vivat is a two-seater, all metal powered glider with side by side seats. The wing is equipped with air brakes on the upper and the lower side. Single- wheel retractable gear with the controllable rear wheel and with the supporting retractable gears on the wing tips.  
The gliders S/N 930508 and lower numbers have the wing equipped with the wing flaps.
  
3. Equipment:

Minimum equipment:  
1 Airspeed indicator (up to 300 km/h)  
1 Altimeter  
1 Magnetic compass  
1 Tachometer with a Engine hours  
1 Fuel gauge  
1 Oil thermometer  
1 Oil pressure gauge  
1 Nitrogen pressure gauge in the center-section flange  
2 Safety harness
  
4. Dimensions:

Span	16.8 m
Length	8.3 m
Height	2.3 m
Wing Area	20.2 m <sup>2</sup>
  
5. Engine:
  - 5.1 Model: Limbach L 2000 E01
  
  - 5.2 Type Certificate:
    - LBA No. 4597 issued January 20, 1989
    - CAA CSFR TAC No. 92-93 issued September 3, 1992
  
  - 5.3 Limitations:

Takeoff Power	51 kW
Max. Continuous Power	51 kW
Cruising Power	---
Max. Engine RPM	3400 RPM
Max. Continuous RPM	2900 RPM
Idle RPM	700 RPM
Max. Cylinder Head Temperature	250°C
Min. Cylinder Head Temperature	---
Max. Oil Pressure	4 bar
Min. Oil Pressure	1 bar
Max. Oil Temperature	120°C
Min. Oil Temperature	50°C

6. Propeller:
  - 6.1 Model: MTV-01-A
  - 6.2 Type Certificate: -LBA No. 32.130/53 of October 10, 1989  
-CAA CSFR TAC No. 92-24 issued September 3, 1992
  - 6.3 Number of Blades: 2
  - 6.4 Diameter: 1600 mm
  - 6.5 Sense of Rotation: clockwise
7. Fluids:
  - 7.1 Fuel:
 

Leaded aviation petrol	min. 96 oct.
Leaded car petrol	min. 96 oct.
  - 7.2 Oil: Motor-car engine oil API performance rating SE minimum
8. Air Speeds:
 

Manoeuvring Speed $V_A$	160 km/h IAS
Never Exceed Speed $V_{NE}$	205 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, cloud flying (engine off)
10. Maximum Weights:
 

Maximum Takeoff weight:	720 kg
Maximum Weight of non-lifting parts:	440 kg
Empty Weight:	500 kg $\pm$ 3%
Maximum Baggage Weight	20 kg
11. Centre of Gravity Range: 24 %  $\div$  38.5 % MAC (operating)  
[1216 - 1401 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		$3^{\circ}30' \pm 1^{\circ}$	
Trim tab	up	$12^{\circ} \pm 1^{\circ}$	
	down	$35^{\circ} \pm 1^{\circ}$	

#### **EIV. Operating and Service Instructions**

1. Flight Manual:

Flight Manual for L 13 SL Vivat powered sailplane, issued January 1992 or later EASA approved revision, valid for S/N 930508 and lower

Flight Manual for L 13 SL Vivat powered sailplane-2nd edition, issued March 1993 or later EASA approved revision, valid for S/N 930510 and higher

2. Operating and Maintenance Manual:

- Powered sailplane

Document No. 730941 Technical Description, Operating Instructions and Maintenance Manual for L 13 SL Vivat glider, issued May, 1991 or later approved revision, valid for S/N 930508 and lower

- Powered sailplane

Document No. 750941 Technical Description, Operating Instructions and Maintenance Manual for L 13 SL Vivat glider, issued August, 1993 or later approved revision, valid for S/N 930510 and higher

- Engine

“Operation and Maintenance Manual for engine LIMBACH L 2000 issued February, 1984

- Propeller

Document No. E-118, “User Manual of propeller Mühlbauer MTV-1-A, 6<sup>th</sup> issue, May 1990

#### **EV. Notes**

1. This aircraft type was transferred to EASA on Accession of the Czech Republic (‘grandfathered’). This TCDS has been raised to record the change in the TC holder.

**SECTION E2: Reserved**

**SECTION F1: GENERAL, L 13 SDL Vivat Type Design**

**F1. General**

Data Sheet No.: EASA.A.046	Issue: 01	Date: 12 August 2005
1. a) Type:	L 13 Vivat	
b) Variant:	L 13 SDL 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 S/N 910428  Aerotechnik s.r.o. 686 04 Kunovice CZECH REPUBLIC S/N 950612	
5. Certification Application Date:	---	
6. CAA CZ Certification Date:	February 9, 1994	
7. EASA Type Certification Date:	12 August 2005	
8. The EASA Type Certificate replaces Czech Type Certificate No. 92-01		

**FII. Certification Basis**

1. Reference Date for determining the applicable requirements:	---
2. Certification Basis:	---
3. Airworthiness Requirements:	JAR-22 Sailplanes and Powered Sailplanes, Change 4, issued May 7, 1987 including the Amendment 22/92/1
4. Requirements elected to comply:	None
5. EASA Special Conditions:	Preliminary directive LBA for certifying electrical equipment of powered gliders 334-MS90.
6. EASA Exemptions:	None
7. EASA Equivalent Safety Findings:	None

8. EASA Environmental Standards: ICAO Annex 16 and LSL Noise Regulations, valid from January 1, 1989 including Change II-69/90

### **FIII. Technical Characteristics and Operational Limitations**

1. Type Design Definition: List of Drawings for powered sailplane L 13 SDL Vivat, condition to January 21, 1994 or later CAA CZ approved revision.
2. Description: L 13 SDL Vivat is a two-seater, all metal powered glider with side by side seats. The wing is equipped with air brakes on the upper and the lower side. Two-wheel fixed landing gear with the tail gears.
3. Equipment: Minimum equipment:  
1 Airspeed indicator (up to 300 km/h)  
1 Altimeter  
1 Magnetic compass  
1 Tachometer with a Engine hours  
1 Fuel gauge  
1 Oil thermometer  
1 Oil pressure gauge  
1 Nitrogen pressure gauge in the center-section flange  
2 Safety harness
4. Dimensions:
- |           |                     |
|-----------|---------------------|
| Span      | 16.8 m              |
| Length    | 8.3 m               |
| Height    | 2.3 m               |
| Wing Area | 20.2 m <sup>2</sup> |
5. Engine:
- 5.1 Model: Limbach L 2000 E01
- 5.2 Type Certificate: -LBA No. 4597 issued January 20, 1989  
-CAA CSFR TAC No. 92-93 issued September 3, 1992
- 5.3 Limitations:
- |                                |          |
|--------------------------------|----------|
| Takeoff Power                  | 51 kW    |
| Max. Continuous Power          | 51 kW    |
| Cruising Power                 | ---      |
| Max. Engine RPM                | 2900 RPM |
| Max. Continuous RPM            | 2900 RPM |
| Idle RPM                       | 700 RPM  |
| Max. Cylinder Head Temperature | 250°C    |
| Min. Cylinder Head Temperature | ---      |
| Max. Oil Pressure              | 4 bar    |
| Min. Oil Pressure              | 1 bar    |
| Max. Oil Temperature           | 120°C    |
| Min. Oil Temperature           | 50°C     |
6. Propeller:
- 6.1 Model: MTV-01-A

6.2 Type Certificate:	-LBA No. 32.130/53 of October 10, 1989 -CAA CSFR TAC No. 92-24 issued September 3, 1992
6.3 Number of Blades:	2
6.4 Diameter:	1600 mm
6.5 Sense of Rotation	clockwise
7. Fluids:	
7.1 Fuel:	Leaded aviation petrol      min. 96 oct. Leaded car petrol            min. 96 oct.
7.2 Oil:	Motor-car engine oil API performance rating SE minimum
8. Air Speeds:	
Manoeuvring Speed $V_A$	160 km/h IAS
Never Exceed Speed $V_{NE}$	205 km/h IAS
Rough Air Speed $V_{RA}$	160 km/h IAS
9. Operational Capability:	VFR, cloud flying (engine off)
10. Maximum Weights:	
Maximum Takeoff weight:	720 kg
Maximum Weight of non-lifting parts:	440 kg
Empty Weight:	510 kg $\pm$ 3%
Maximum Baggage Weight:	20 kg
11. Centre of Gravity Range:	24 % $\div$ 38,5 % MAC (operating) [1216 - 1401 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 at longitudinal axis - No. 2L and 4L and at lateral axis - No. 9L and 9P (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		$30^{\circ} \pm 2^{\circ}$
	Trim tab	up	$12^{\circ} \pm 1^{\circ}$
		down	$35^{\circ} \pm 1^{\circ}$

#### **FIV. Operating and Service Instructions**

1. Flight Manual:

Flight Manual for the Powered Sailplane L 13 SDL Vivat, issued June 1993, or later EASA approved revision

- Document No. 750951 - Czech language
- Document No. 750952 - English language
- Document No. 750953 - German language
- Document No. 750954 - USA

2. Operating and Maintenance Manual:

- Powered sailplane

Technical Description, Operating Instructions and Maintenance Manual for L 13 SDL Vivat Powered Sailplane, issued September 1993, or later approved revision

- Document No. 750961 - Czech language
- Document No. 750962 - English language
- Document No. 750963 - German language
- Document No. 750964 - USA

- Engine

“Operation and Maintenance Manual for engine LIMBACH L 2000 issued February, 1984

- Propeller

Document No. E-118, “User Manual of propeller Mühlbauer MTV-1-A, 6<sup>th</sup> issue, May 1990

#### **FV. Notes**

None

**SECTION F2: Reserved**