

Civil Aviation Authority Czech Republic

CAA CZ

TYPE-CERTIFICATE DATA SHEET

L 13 SL 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 s.r.o.

686 04 Kunovice
CZECH REPUBLIC

For variants: L 13 SL Vivat
 L 13 SDL Vivat

Issue 4: August 01, 2005

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SECTION A1: GENERAL, L 13 SL Vivat Type Design

A1. General

Data Sheet No.: 92-01	Issue: 4	Date: August 01, 2005
1. a) Type:	L 13 SL 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	

AII. 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. Special Conditions:	Preliminary directive LBA for certifying electrical equipment of powered gliders 334-MS90.
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 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
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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 ²

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	59 kW
Max. Continuous Power	51 kW
Cruising Power	---
Max. Engine RPM (max. 5 min)	3400 RPM
Max. Continuous RPM	3000 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	anticlockwise		
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° \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		$3^{\circ}30' \pm 1^{\circ}$
Trim tab	up	$12^{\circ} \pm 1^{\circ}$
	down	$35^{\circ} \pm 1^{\circ}$

AIV. Operating and Service Instructions

1. Flight Manual:

Flight Manual for L 13 SL Vivat powered sailplane, issued January 1992 or later CAA CZ 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 CAA CZ 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, 6th issue, May 1990

AV. Notes

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

SECTION A2: Reserved

SECTION B1: GENERAL, L 13 SDL Vivat Type Design

B1. General

Data Sheet No.: 92-01	Issue: 4	Date: August 01, 2005
1. a) Type:	L 13 SL 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	

BII. 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. Special Conditions:	Preliminary directive LBA for certifying electrical equipment of powered gliders 334-MS90.
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 for powered sailplane L 13 SDL Vivat, condition to January 21, 1994 or later CAA CZ approved revision
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. 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 ²
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	59 kW
Max. Continuous Power	51 kW
Cruising Power	---
Max. Engine RPM (max. 5 min)	3400 RPM
Max. Continuous RPM	3000 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	anticlockwise		
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 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°

Trim tab	up	$12^{\circ} \pm 1^{\circ}$
	down	$35^{\circ} \pm 1^{\circ}$

BIV. Operating and Service Instructions

1. Flight Manual:

Flight Manual for the Powered Sailplane L 13 SDL Vivat, issued June 1993

- 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

- 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, 6th issue, May 1990

BV. Notes

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

SECTION B2: Reserved