TYPE-CERTIFICATE

DATA SHEET

No. EASA.A.046

for

L 13 Vivat

Type Certificate Holder

EVEKTOR, spol. s r. o.
Letecká 1008
686 04 Kunovice
Czech Republic

For models: L 13 SW Vivat
L 13 SE Vivat
L 13 SEH Vivat
L 13 SDM Vivat
L 13 SL Vivat
L 13 SDL Vivat

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Content:

SECTION A: L 13 SW VIVAT

A.I. General

1. Type/ Model/ Variant	
1.1 Type	L 13 Vivat
1.2 Model	L 13 SW Vivat
1.3 Variant	-
2. Airworthiness Category	Utility
3. Manufacturer	Aerotechnik – podnik ÚV Svazarmu Letiště Kunovice 686 04 Kunovice Czechoslovakia
4. EASA Type Certification Application Date	-
5. State of Design Authority	Czech Republic
6. State of Design Authority Type Certificate Date	March 17, 1982
7. EASA Type Certification Date	12 August 2005 (see Note 1)

A.II. EASA Certification Basis

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

A.III. 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 m²

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	Take-off 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. Load factors	+5,3 G	
	-2,65 G	
7. Propeller		
7.1 Model	Ho-V 62R or V 218B	
7.2 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	
7.3 Number of blades	2	
7.4 Diameter	Ho-V 62R	1600 mm
	V 218B	1500 mm
7.5 Sense of Rotation	left (anticlockwise)	

8. Fluids

8.1 Fuel	Unleaded aviation petrol	min. 78 oct.
	Unleaded car petrol	min. 78 oct.
8.2 Oil	Motor-car engine oil API performance rating SF minimum (viscosity according to the Engine Operation and Maintenance Manual)	
8.3 Coolant	Air	

9. Fluid capacities

9.1 Fuel	-
9.2 Oil	-
9.3 Coolant system capacity	-

10. 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
11. Maximum Operating Altitude	16 400 ft
12. Approved Operations Capability	VFR Day, cloud flying (engine off)

13. Maximum Masses

Maximum Take-off weight:	705 kg
Maximum Weight of non-lifting parts:	440 kg
Empty Weight:	485 kg ± 3%
14. Centre of Gravity Range	24 % ÷ 38,5 % MAC (operating) [1216 - 1408 mm from Reference plane] 33 % ± 2,5% MAC (empty motor-glider) [1331 ± 32 mm from Reference plane]
15. Datum	Firewall

16. Control surface deflections:

Aileron	up	32° ± 2°
	down	13° ± 2°
Elevator	up	32° ± 2°
	down	22° ± 2°
Air brakes	upper	150 mm ± 10 mm
	lower	130 mm ± 10 mm
Rudder to both sides	30° ± 2°	
Flaps	3°30′ ± 1°	

17. 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 levelling points 3 and 4 (defined by the Levelling Record).

18. Minimum Flight Crew — 1 (Pilot)

19. Maximum Passenger Seating Capacity — 1

20. Baggage/ Cargo Compartments — Maximum baggage weight 15 kg

21. Wheels and Tyres

Main landing gear	Barum 350x135 or Dunlop Aero 380x150-5
Rear landing gear	Continental 200x50

22. (Reserved) -

A.IV. Operating and Service Instructions

1. Flight Manual

- Flight Manual - Issue September, 1987 or later EASA approved revision,
- Flight Manual, Doc. No. 710901, Issue December, 1998, or later EASA approved revision, valid for the operation without overhaul

2. Maintenance Manual

- Powered sailplane	Doc. No. SW Vivat 13.911-02, Technical Description, Operating and Maintenance Manual of Powered Sailplane - Issue December, 1983 or later approved revision Supplement No. 4 to Doc. No. SW Vivat 13-911-02, Issue June, 1990
Document No. 710911, Technical Description, Operating, Maintenance and Repair Manual of L 13 SW Vivat / L 13 SE Vivat Powered Sailplane, Date of Issue February, 1999 or later EASA approved revision, valid for the operation without overhaul	
- 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
3. Structural Repair Manual	-
4. Weight and Balance Manual	-
5. Illustrated Parts Catalogue	Illustrated Parts Catalogue for L 13 SW Vivat - Issue August, 1986, or later approved revision

A.V. Notes

1. This aircraft type was transferred to EASA on Accession of the Czech Republic ('grandfathered'). The EASA Type Certificate replaces the Czech Type Certificate No. 82-01.

SECTION B: L 13 SE VIVAT

B.I. General

1. Type/ Model/ Variant	
1.1 Type	L 13 Vivat
1.2 Model	L 13 SE Vivat
1.3 Variant	-
2. Airworthiness Category	Utility
3. 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
4. EASA Certification Application Date	
5. State of Design Authority	Czech Republic
6. State of Design Authority Type Certificate Date	20 April 1989
7. EASA Type Certification Date	12 August 2005 (see Note 1)

B.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	-
2. Airworthiness Requirements	L 8/0 Airworthiness Regulation for Powered Gliders valid since July 1, 1976
3. Special Conditions	None
4. Exemptions	None

5. (Reserved) Deviations	-
6. Equivalent Safety Findings	None
7. Environmental Protection	ICAO Annex 16 and LSL Noise Regulations, valid from January 1, 1989 including Change II-69/90

B.III. 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 Indicator
	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 m²

5. Engine

5.1. Model	Mikron III AE		
5.1.1 Type Certificate	CAA CSFR (Czech and Slovak Federative Republic) TC No. 92-05, issued July 24, 1992		
5.1.2 Limitations	Take-off 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. Model	Mikron III B		
5.2.1 Type Certificate	CAA CSFR TC No. 92-05, issued July 24, 1992 + supplement 1, issued May 5, 1996		

5.2.2 Limitations	Take-off Power	55 kW (max. 5 min)
	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. Load factors	+5,3 G	
	-2,65 G	
7. Propeller		
7.1 Model	Ho-V 62R or V 218B	
7.2. 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	
7.3 Number of blades	2	
7.4 Diameter	Ho-V 62R	1600 mm
	V 218B	1500 mm
7.5 Sense of Rotation	left (anticlockwise)	
8. Fluids		
8.1 Fuel	Unleaded aviation petrol	min. 78 oct.
	Unleaded car petrol	min. 78 oct.
8.2 Oil	Motor-car engine oil API performance rating SF minimum (viscosity according to the Engine Operation and Maintenance Manual)	
8.3 Coolant	Air	

9. Fluid capacities

9.1 Fuel	-
9.2 Oil	-
9.3 Coolant system capacity	-

10. 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

11. Maximum Operating Altitude 16 400 ft

12. Approved Operations Capability VFR Day, cloud flying (engine off)

13. Maximum Masses

Maximum Take-off weight:	705 kg
Maximum Weight of non-lifting parts:	440 kg
Empty Weight:	485 kg ± 3%

14. Centre of Gravity Range 24 % ÷ 38,5 % MAC (operating)
[1216 - 1408 mm from Reference plane]
33 % ± 2,5% MAC (empty motor-glider)
[1331 ± 32 mm from Reference plane]

15. Datum Firewall

16. Control surface deflections:

Aileron	up	32° ± 2°
	down	13° ± 2°
Elevator	up	32° ± 2°
	down	22° ± 2°
Air brakes	upper	150 mm ± 10 mm
	lower	130 mm ± 10 mm
Rudder to both sides	30° ± 2°	
Flaps	3°30’ ± 1°	
	Trim tab	up 12° ± 1°
	down	35° ± 1°

17. 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 levelling points 3 and 4 (defined by the Levelling Record).	
18. Minimum Flight Crew		1 (Pilot)
19. Maximum Passenger Seating Capacity		1
20. Baggage/ Cargo Compartments	Maximum baggage weight	15 kg
21. Wheels and Tyres	Main landing gear	Barum 350x135 or Dunlop Aero 380x150-5
	Rear landing gear	Continental 200x50

22. (Reserved)

B.IV. Operating and Service Instructions

1. Flight Manual:

- L 13 SE Vivat with Mikron III AE engine Flight Manuals – issue August, 1989 or later EASA approved revision including Supplements
- Supplement No. 1, Date of Issue 22.1.1990 or later approved revision
- Supplement No. 3, Date of Issue 10.6.1990 or later approved revision
- Supplement No. 4, valid for S/N 900401. Date of Issue January 1993 or later approved revision.
- Supplement No. 6, Date of Issue 1.4.1988 or later approved revision
- Supplement No. 7, Date of Issue May 1991 or later approved revision
- Supplement No. 8, valid for S/N 910420. Date of Issue February 1992 or later approved revision.
- Supplement No. 9, Date of Issue February 1992 or later approved revision
- Supplement No. 10, Date of Issue February 1993 or later approved revision
- Supplement No. 11, valid for S/N 890317. Date of Issue August 1994 or later approved revision
- Supplement No. 12, Date of Issue October 1994 or later approved revision
- Supplement No. 13, valid for S/N 01/78. Date of Issue 6.6.1996 or later approved revision
- Supplement No. 14, Date of Issue September 1997 or later approved revision
- Supplement No. 15, Date of Issue March 1998 or later approved revision
- Flight Manual, Doc. No. 710901, Date of Issue December, 1998 or later EASA approved revision, valid for the operation without overhaul including Supplements
- Document No. 710901-D1, valid for S/N 980621. Date of Issue November, 1999 or later approved revision
- Document No. 710901-D7, valid for S/N 850104. Date of Issue June, 2003 or later approved revision
- Document No. 710901-D16, Date of Issue April, 2008 or later approved revision
- Document No. 710901-D17, Date of Issue April, 2008 or later approved revision
- Document No. 710901-D20, valid for S/N 860120. Date of Issue January, 2011 or later 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. Maintenance Manual

- Powered sailplane, Mikron III AE engine

- Technical Description, Operating and Maintenance Manual of Powered Sailplane - Issue October, 1989 or later approved revision including Supplements
- Supplement No. 1, Date of Issue 1.4.1988 or later approved revision
- Supplement No. 2, Date of Issue 15.9.1989 or later approved revision
- Supplement No. 3, Date of Issue 26.1.1990 or later approved revision
- Supplement No. 4, Date of Issue 10.6.1990 or later approved revision
- Supplement No. 6, Date of Issue 1.4.1988 or later approved revision
- Supplement No. 7, Date of Issue May 1991 or later approved revision
- Supplement No. 8, Date of Issue February 1992 or later approved revision
- Supplement No. 10, Date of Issue February 1993 or later approved revision
- Supplement No. 14, Date of Issue September 1997 or later approved revision
- Supplement No. 15, Date of Issue March 1998 or later approved revision
- Document No. 710911 Technical Description, Operating, Maintenance and Repair Manual of L 13 SW Vivat / L 13 SE Vivat Powered Sailplane, Date of Issue February, 1999 or later EASA approved revision, valid for the operation without overhaul including Supplements
- Document No. 790911-D1, valid for S/N 980621. Date of Issue November, 1999 or later approved revision
- Document No. 790911-D7, Date of Issue July, 2003 or later approved revision
- Document No. 790911-D16, Date of Issue April, 2008 or later approved revision
- Document No. 790911-D17, Date of Issue April, 2008 or later approved revision
- Document No. 790911-D20, valid for S/N 860120. Date of Issue February, 2011 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

3. Structural Repair Manual -

4. Weight and Balance Manual -

5. Illustrated Parts Catalogue -

B.V. Notes

1. This aircraft type was transferred to EASA on Accession of the Czech Republic (‘grandfathered’). The EASA Type Certificate replaces Czech Type Certificate No. 82-01.

SECTION C: L 13 SEH VIVAT

C.I. General

1. Type/ Model/ Variant	
1.1 Type	L 13 Vivat
1.2 Model	L 13 SEH Vivat
1.3 Variant	-
2. Airworthiness Category	Utility
3. 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
4. EASA Certification Application Date	-
5. State of Design Authority	Czech Republic
6. State of Design Authority Type Certificate Date	24 March 1992
7. EASA Type Certification Date	12 August 2005 (see Note 2)

C.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	6 June 1992
2. Airworthiness Requirements	JAR-22, Sailplanes and Powered Sailplanes, Change 4, issued May 7, 1987
3. Special Conditions	LBA preliminary direction for Certification of motor gliders´ electric equipment 334-MS90
4. Exemptions	None
5. (Reserved) Deviations	-
6. Equivalent Safety Findings	None

7. Environmental Protection	ICAO Annex 16 and LSL Noise Regulations, valid from January 1, 1989 including Change II-69/90

C.III. 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 an 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 centre-section flange
	2 Safety harness
4. Dimensions	
Span	16.8 m
Length	8.3 m
Height	2.3 m
Wing Area	20.2 m²

5. Engine

5.1 Model		Mikron III AE	
	5.1.1 Type Certificate	CAA CSFR (Czech and Slovak Federative Republic) TC No. 92-05, issued July 24, 1992	
	5.1.2 Limitations	Take-off 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 Model		Mikron III B	
	5.2.1 Type certificate	CAA CSFR TC No. 92-05, issued July 24, 1992 + Supplement No.1, issued May 5, 1996 by CAA CZ	
5.2.2 Limitations		Take-off Power	55 kW (max.5 min)
		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. Load factors	+5,3 G	-2,65 G

7. Propeller

7.1 Model	Ho-V 62R	
7.2 Type Certificate	LBA TC No. 32.130/13, issued on September 20, 1972	
	- Czechoslovak State Aviation Inspection TC No. 92-22, issued on September 3, 1992	
7.3 Number of blades	2	
7.4 Diameter	1600 mm	
7.5 Sense of Rotation	left (anticlockwise)	

8. Fluids

8.1 Fuel	Unleaded aviation petrol	min. 78 oct.
	Unleaded car petrol	min. 78 oct.
8.2 Oil	Motor-car engine oil API performance rating SF minimum (viscosity accord to the Engine Oper. and Maint. Manual)	
8.3 Coolant	Air	

9. Fluid capacities

9.1 Fuel	-
9.2 Oil	-
9.3 Coolant system capacity	-

10. Air Speeds

Manoeuvring Speed V_A	160 km/h IAS
Never Exceed Speed V_{NE}	205 km/h IAS
Rough Air Speed VRA	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

11. Maximum Operating Altitude 16 400 ft

12. Approved Operations Capability VFR, cloud flying (engine off)

13. Maximum Masses

Maximum Take-off weight	720 kg
Maximum Take-off weight	705 kg (see note 1)
Maximum Weight of non-lifting parts	440 kg
Empty Weight	500 kg ± 3%

14. Centre of Gravity Range	24 % ÷ 38,5 % MAC (operating)	
	[1216 - 1401 mm from Reference plane]	
	33 % ± 2,5% MAC (empty motor-glider) [1331 ± 32 mm from Reference plane]	
15. Datum	Firewall	
16. Control surface deflections:		
Aileron	up	32° ± 2°
	down	13° ± 2°
Elevator	up	32° ± 2°
	down	22° ± 2°
Air brakes	upper	150 mm ± 10 mm
	lower	130 mm ± 10 mm
Rudder to both sides	30° ± 2°	
Flaps	3°30’ ± 1°	
17. 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 levelling points 3 and 4 (defined by the Levelling Record).	
18. Minimum Flight Crew	1(Pilot)	
19. Maximum Passenger Seating Capacity	1	
20. Baggage/ Cargo Compartments	Maximum baggage weight	20 kg
21. Wheels and Tyres	Main landing gear	Dunlop Aero 380x150-5
	Rear landing gear	Continental 200x50

22. (Reserved)

C.IV. 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.
- Document without 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. 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 without No., 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
3. Structural Repair Manual	-
4. Weight and Balance Manual	-
5. Illustrated Parts Catalogue	Illustrated Parts Catalogue for L 13 SEH Vivat issued December 1993, or later approved revision - Document No. 730991 – Czech language - Document No. 730992 – English language

C.V. 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’). The EASA Type Certificate replaces Czech Type Certificate No. 92-04.

SECTION D: L 13 SDM VIVAT

D.I. General

1. Type/ Model/ Variant	
1.1 Type	L 13 Vivat
1.2 Model	L 13 SDM Vivat
1.3 Variant	-
2. Airworthiness Category	Utility
3. 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
4. Certification Application Date	-
5. State of Design Authority	Czech Republic
6. State of Design Authority Type Certificate Date	15 September 1995
7. EASA Type Certification Date	12 August 2005 (see Note 2)

D.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	-
2. Airworthiness Requirements	JAR-22, Sailplanes and Powered Sailplanes, Change 4, issued May 7, 1987 including Amendment 22/92/1

3. Special Conditions	LBA preliminary direction for Certification of motor gliders´ electric equipment 334-MS90
4. Exemptions	None
5. (Reserved) Deviations	-
6. Equivalent Safety Findings	None
7. Environmental Protection	ICAO Annex 16 and LSL Noise Regulations, valid from January 1, 1989 including Change II-69/90

D.III. 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:	1 Airspeed indicator (up to 300 km/h)
	1 Altimeter
	1 Vertical speed indicator
	1 Magnetic compass
	1 Tachometer with an 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 centre-section flange
	2 Safety harness
4. Dimensions	
Span	16.8 m
Length	8.3 m
Height	2.3 m
Wing Area	20.2 m²

5. Engine

5.1. Model		Mikron III AE	
	5.1.1 Type Certificate	CAA CSFR TC No. 92-05, issued July 24, 1992	
	5.1.2 Limitations	Take-off 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 RP	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. Model		Mikron III B	
	5.2.1 Type Certificate	CAA CSFR TC No. 92-05, issued July 24, 1992 +Supplement No.1, issued May 5, 1996 by CAA CZ	
	5.2.2 Limitations	Take-off Power	55 kW (max. 5 min)
		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. Load factors		+5,3 G-2,65 G	

7. Propeller

7.1 Model	Ho-V 62R	
7.2 Type Certificate	- LBA TC No. 32.130/13, issued on September 20, 1972	
	- CAA CSFR TAC No. 92-22, issued on September 3, 1992	
7.3 Number of blades	2	
7.4 Diameter	1600 mm	
7.5 Sense of Rotation	left (anticlockwise)	

8. Fluids

8.1 Fuel	Unleaded aviation petrol	min. 78 oct.
	Unleaded car petrol	min. 78 oct.
8.2 Oil	Motor-car engine oil API performance rating SF minimum (viscosity accord to the Engine Oper. and Maint. Manual)	
8.3 Coolant	Ai	

9. Fluid capacities	-
9.1 Fuel	-
9.2 Oil	-
9.3 Coolant system capacity	-
10. Air Speeds	
Manoeuvering 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
11. Maximum Operating Altitude	16 400 ft
12. Approved Operations Capability	VFR, cloud flying (engine off)
13. Maximum Masses	
	Maximum Take-off weight 720 kg
	Maximum Take-off weight 705 kg (see note 1)
	Maximum Weight of non-lifting parts 440 kg
	Empty Weight 510 kg ± 3%
14. Centre of Gravity Range	24 % ÷ 38,5 % MAC (operating)
	[1216 - 1401 mm from Reference plane]
	33 % ± 2,5% MAC (empty motor-glider)
	[1331 ± 32 mm from Reference plane]
15. Datum	Firewall

16. Control surface deflections:

Aileron	up	32° ± 2°
	down	13° ± 2°
Elevator	up	32° ± 2°
	down	22° ± 2°
Air brakes	upper	150 mm ± 10 mm
	lower	130 mm ± 10 mm
Rudder to both sides	30° ± 2°	
Flaps	3°30’ ± 1°	

17. 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 levelling points 3 and 4 (defined by the Levelling Record).

18. Minimum Flight Crew — 1 (Pilot)

19. Maximum Passenger Seating Capacity — 1

20. Baggage/ Cargo Compartments	Maximum baggage weight	15 kg
21. Wheels and Tyres	Main landing gear	Barum 350x135
	Rear landing gear	Continental 200x50

22. (Reserved)

D.IV. Operating and Service Instructions

1. Flight Manual
   - Document No. 730951, Date of Issue April, 1994 or later EASA approved revision, valid for powered sailplanes with MIKRON III AE engine installed including Supplements
   - Document No. 730951-D1, Date of Issue September, 1994 or later approved revision
   - Document No. 730951-D2, Date of Issue February, 1995 or later approved revision
   - Document No. 730951-D4, Date of Issue April, 1996 or later approved revision
   - Document No. 731951, Date of Issue July, 1996 or later EASA approved revision valid for powered sailplanes with MIKRON III B engine installed including Supplement No. 8 to Document No. 731951, Date of Issue April, 2005 or later approved revision

2. Maintenance Manual

- Powered Sailplane	Document No. 730961, Date of Issue September, 1993 or later approved revision, valid for powered sailplanes with MIKRON III AE engine installed including Supplements - Document No. 730961-D1, Date of Issue February, 1995 or later approved revision - Document No. 730961-D3, Date of Issue April, 2005 or later approved revision
- Powered Sailplane	Document No. 730961-D2, Date of Issue May, 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.
3. Structural Repair Manual	-
4. Weight and Balance Manual	-
5. Illustrated Parts Catalogue	-

D.V. 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’). The EASA Type Certificate replaces Czech Type Certificate No. 92-04.

SECTION E: L 13 SL VIVAT

E.I. General

1. Type/ Model/ Variant	
1.1 Type	L 13 Vivat
1.2 Model	L 13 SL Vivat
1.3 Variant	-
2. Airworthiness Category	Utility
3. Manufacturer	Aerotechnik – podnik ÚV Svazarmu Letiště Kunovice 686 04 Kunovice Czechoslovakia
4. EASA Certification Application Date	-
5. State of Design Authority	Czech Republic
6. State of Design Authority Type Certificate Date	April 2, 1992
7. EASA Type Certification Date	12 August 2005 (see Note 1)

E.II. EASA Certification Basis

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

E.III. 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 30 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 centre-section flange 2 Safety harness
4. Dimensions	
Span	16.8 m
Length	8.3 m
Height	2.3 m
Wing Area	20.2 m²

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	Take-off 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. Load factors	+5,3 G - 2,65 G	
7. Propeller		
7.1 Model	MTV-01-A	
7.2 Type Certificate	- LBA No. 32.130/53 of October 10, 1989	
	- CAA CSFR TAC No. 92-24 issued September 3, 1992	
7.3 Number of blades	2	
7.4 Diameter	1600 mm	
7.5 Sense of Rotation	clockwise	
8. Fluids		
8.1 Fuel	Leaded aviation petrol	min. 96 oct.
	Leaded car petrol	min. 96 oct.
8.2 Oil	Motor-car engine oil API performance rating SE minimum	
8.3 Coolant	Air	
9. Fluid capacities		
9.1 Fuel	-	
9.2 Oil	-	
9.3 Coolant system capacity	-	

10. 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

11. Maximum Operating Altitude	16 400 ft	
12. Approved Operations Capability	VFR, cloud flying (engine off)	
13. Maximum Masses	Maximum Take-off weight:	720 kg
	Maximum Weight of non-lifting parts:	440 kg
	Empty Weight:	500 kg ± 3%
14. Centre of Gravity Range	24 % ÷ 38.5 % MAC (operating)	
	[1216 - 1401 mm from Reference plane]	
15. Datum	Firewall	

16. Control surface deflections:

Aileron	up	32° ± 2°
	down	13° ± 2°
Elevator	up	32° ± 2°
	down	22° ± 2°
Air brakes	upper	150 mm ± 10 mm
	lower	130 mm ± 10 mm
Rudder to both sides	30° ± 2°	
Flaps	3°30’ ± 1°	
Trim tab	up	12° ± 1°
	down	35° ± 1°

17. 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 levelling points 3 and 4 (defined by the Levelling Record).	
18. Minimum Flight Crew	1 (Pilot)	
19. Maximum Passenger Seating Capacity	1	
20. Baggage/ Cargo Compartments	Maximum Baggage Weight	20 kg
21. Wheels and Tyres	Main landing gear	Dunlop 380x150-5
	Rear landing gear	Continental 200x50

22. (Reserved)

E.IV. 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. Maintenance Manual

- Powered sailplane	Document without No. 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
3. Structural Repair Manual	-
4. Weight and Balance Manual	-
5. Illustrated Parts Catalogue	-

E.V. Notes

1. This aircraft type was transferred to EASA on Accession of the Czech Republic ('grandfathered'). The EASA Type Certificate replaces Czech Type Certificate No. 92-01.

SECTION F: L 13 SDL VIVAT

F.I. General

1. Type/ Model/ Variant	
1.1 Type	L 13 Vivat
1.2 Model	L 13 SDL Vivat
1.3 Variant	-
2. Airworthiness Category	Utility
3. Manufacturer	Aerotechnik – podnik ÚV Svazarmu Letiště Kunovice 686 04 Kunovice Czechoslovakia S/N 910428 Aerotechnik s.r.o. Letiště Kunovice 686 04 Kunovice Czech Republic S/N 950612
4. EASA Certification Application Date	-
5. State of Design Authority	Czech Republic
6. State of Design Authority Type Certificate Date	9 February 1994
7. EASA Type Certification Date	12 August 2005

F.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	-
2. Airworthiness Requirements	JAR-22 Sailplanes and Powered Sailplanes, Change 4, issued May 7, 1987 including the Amendment 22/92/1
3. Special Conditions	Preliminary directive LBA for certifying electrical equipment of powered gliders 334-MS90.

4. Exemptions	None
5. (Reserved) Deviations	
6. Equivalent Safety Findings	None
7. Environmental Protection	ICAO Annex 16 and LSL Noise Regulations, valid from January 1, 1989 including Change II-69/90

F.III. 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:	
..	Airspeed indicator (up to 300 km/h) 1 Altimeter 1 Magnetic compass 1 Tachometer with an Engine hours 1 Fuel gauge 1 Oil thermometer 1 Oil pressure gauge 1 Nitrogen pressure gauge in the centre-section flange 2 Safety harness
4. Dimensions	
Span	16.8 m
Length	8.3 m
Height	2.3 m
Wing Area	20.2 m²

5. Engine

5.1. Model	Limbach L2000E01	
5.2 Type Certificate	- LBA No. 4597 issued January 20, 1989	
	- CAA CSFR TAC No. 92-93 issued September 3, 1992	
5.3 Limitations	Take-off 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. Load factors	+5,3 G - 2,65 G	
7. Propeller		
7.1 Model	MTV-01-A	
7.2 Type Certificate	- LBA No. 32.130/53 of October 10, 1989	
	- CAA CSFR TAC No. 92-24 issued September 3, 1992	
7.3 Number of blades	2	
7.4 Diameter	1600 mm	
7.5 Sense of Rotation	clockwise	
8. Fluids		
8.1 Fuel	Leaded aviation petrol	min. 96 oct.
	Leaded car petrol	min. 96 oct.
8.2 Oil	Motor-car engine oil API performance rating SE minimum	
8.3 Coolant	Air	
9. Fluid capacities		
9.1 Fuel	-	
9.2 Oil	-	
9.3 Coolant system capacity	-	

10. 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	

11. Maximum Operating Altitude 16 400 ft

12. Approved Operations Capability VFR, cloud flying (engine off)

13. Maximum Masses

Maximum Take-off weight:	720 kg	
Maximum Weight of non-lifting parts:		440 kg
Empty Weight:	510 kg ± 3%	

14. Centre of Gravity Range 24 % ÷ 38,5 % MAC (operating)
[1216 - 1401 mm from Reference plane]

15. Datum Firewall

16. Control surface deflections:

Aileron	up	32° ± 2°
	down	13° ± 2°
Elevator	up	32° ± 2°
	down	22° ± 2°
Air brakes	upper	150 mm ± 10 mm
	lower	130 mm ± 10 mm
Rudder to both sides	30° ± 2°	
Trim tab	up	12° ± 1°
	down	35° ± 1°

17. 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 levelling points at longitudinal axis - No. 2L and 4L and at lateral axis – No. 9L and 9P (defined by the Levelling Record).

18. Minimum Flight Crew 1 (Pilot)

19. Maximum Passenger Seating Capacity 1

20. Baggage/ Cargo Compartments Maximum baggage weight 20 kg

21. Wheels and Tyres

Main landing gear	Barum 350x135
Rear landing gear	Continental 200x50

22. (Reserved)

F.IV. 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. 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 th issue, May 1990
3. Structural Repair Manual	-
4. Weight and Balance Manual	-
5. Illustrated Parts Catalogue	-

F.V. Notes

1. This aircraft type was transferred to EASA on Accession of the Czech Republic ('grandfathered'). The EASA Type Certificate replaces Czech Type Certificate No. 92-01.

SECTION ADMINISTRATIVE

I. Acronyms & Abbreviations

II. Type Certificate Holder Record

III. Change Record

Issue	Date	Changes
Issue 01	12 August 2005	Initial Issue
Issue 02	04 September 2018	Supplements and correction of operating and service instructions.

-END-