CIVIL AVIATION AUTHORITY
OF THE CZECH REPUBLIC

94-08
Revision 5
MORAVAN-AEROPLANES a.s.
Z 143 L
Z 143 LSi
15.07.2004

TYPE CERTIFICATE DATA SHEET No. 94-08

This data sheet which is a part of Type Certificate No. 94-08 prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Czech Republic.

Model	Application Date	Certification Date
Z 143 L	01.10.1991	10.06.1994
Z 143 LSi	30.06.2000	30.04.2004

Page No.	1	2	3	4	5	6	7	8	9	10	11
Rev. No.	5	5	5	5	5	5	5	5	5	5	5

Model Z 143 L

I. General

1.	Data Sheet No.:	94-08
2.	Model:	Z 143 L
3.	Airworthiness category:	Normal, (N) Utility, (U)
4.	Type Certificate Holder:	MORAVAN – AEROPLANES, a.s. Letiště 1578, 765 81 Otrokovice.
5.	Manufacturer:	Up to S/N 0029 including MORAVAN a.s. Letiště 1578, 765 81 Otrokovice From S/N 0030 including MORAVAN – AEROPLANES, a.s. Letiště 1578, 765 81 Otrokovice
6.	Application Date:	01.10.1991
7.	Certificate Date:	10.06.1994

II. Certification Basis

1.	Certification Basis:	FAR PART 23, Amdt. 2-41 (including)
2.	Special Conditions:	None
3.	Exemptions:	None
4.	Equivalent Safety Findings:	None
5.	Environmental Standards:	– ICAO Annex. 16/I, Chapter 10 – FAR PART 36, App. G (Amdt. 36-20)

III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	The specification list of Aircraft Z 143 L No. S-L 143.0000; The specification drawing No. L 143.0000	
2. Description:	The Z 143 L aircraft is four-seat, low wing, single-engine, cantilever monoplane.	
3. Equipment:	Master equipment list is stated in "Flight manual of the ZLIN Z 143 L aircraft" with document No. 005.012 (005.011, 005.012 US; 005.013)	
4. Dimensions:	Span:	10.136 m
	Length:	7.577 m
	Height:	2.910 m
	Wing Area:	14.776 m^2
5. Engine:		
5.1. Model:	TEXTRON Lycoming O-540-J3A5	
5.2. Type Certificate:	E – 295, Issued by FAA	
5.3. Limitations:	Max. Continuous power (MT)	
	Max. Power	175 kW
	Max. Engine speed	2400 RPM
	Max. Consuption by engine manufacturer	74 l/h
	Max. Consuption measured at the aircraft	96 l/h
	Max. Manifold pressure	MAX
	Cruising (75 % MC)	
	Max. Power	130 kW
	Max. Engine speed	2 200 RPM
	Max. Consuption by engine manufacturer	53 l/h
	Max. Consuption measured at the aircraft	55.5 l/h
	Max. Manifold pressure	84.6 kPa
	Cruising (60 % MC)	
	Max. Power	104 kW
	Max. Engine speed	2000 RPM
	Max. Consuption by engine manufacturer	38.6 l/h
	Max. Consuption measured at the aircraft	44 l/h
	Max. Manifold pressure	78.6 kPa

6. Propeller:

6.1. Model:	MTV-9-B/195-45a	
6.2. Type Certificate:	32.130/65, Issued by LBA	
6.3. Number of blades:	3	
6.4. Diameter:	1950 mm	
6.5. Sense of Rotation:	Right	

7. Fuel: Aviation gasoline 100L, 100LL (see service instruction of Engine manufacturer)

8. Oil: By average outside air temperature above + 27°C are recommended mineral oils with SAE 60 or dispersant oils with SAE 60.

By average outside air temperature above + 16°C are recommended mineral oils with SAE 50 or dispersant oils with SAE 40 or 50.

By average outside air temperature from - 1°C to + 32°C are recommended mineral oils with SAE 40 or dispersant oils with SAE 40.

By average outside air temperature from - 18°C to + 21°C are recommended mineral oils with SAE 30 or dispersant oils with SAE 40, 30 or 20W40.

By outside air temperature under - 12°C are recommended mineral oils with SAE 20 or dispersant oils with SAE 30 or 20W30.

9. Air Speeds:

Never exceed speed limit (category U, N), v_{NE}	306 km/h IAS
Normal operating speed limit (category U, N), v_{NO}	258 km/h IAS
Design manoeuvring speed limit (category U), v_A	224 km/h IAS
Design manoeuvring speed limit (category N), v_A	236 km/h IAS
Maximum flaps extended speed limit (category U, N), v_{FE}	190 km/h IAS

10. Load factors:

For category Utility (U)	+4.4 g, -1.76 g
For category Normal (N)	+3.8 g, -1.52 g

11. Maximum Operating Altitude:	For category Utility (U) For category Normal (N)		5760 m 4170 m
12. Weights:	Max. Take-off and Landing weight: For category Utility (U) For category Normal (N) – Take-off weight For category Normal (N) – Landing weight Standard empty weight:		 1080 kg 1350 kg 1280 kg 855 kg ± 3 %
13. Centre of Gravity Range:	21 % ÷ 34 % MAC		
14. Datum:	The back part of fire wall; from it are measured, for purpose assignation of Gravity Centre, all horizontal length.		
15. Mean Aerodynamic Cord (MAC):	1489 mm (MAC position: front MAC point 368,4 mm behind the reference station).		
16. Leveling Means:	There is 600 mm below relative surface.		
17. Minimum Flight Crew:	1		
18. Number of seats:	4, (includes crew)		
19. Baggage/Cargo Compartments:	Upper baggage shelf Lower baggage compartment Max. Weight		20 kg 2 x 30 kg 60 kg
20. Control surface deflections:	Elevation deflection	up down	30° ± 1° 27° ± 1°
	Rudder deflection	right and left	30° ± 2°
	Ailerons deflection	up down	21° ± 1° 17° ± 1°
	Wing flaps positions	retracted take-off landing	0° 14° ± 1° 37° ± 1°
21. Wheels and Tyres:	Wheels of main gear K 22-0100-7 with tyre Barum 420 x 150 model 2, or Wheels of main gear K 22-3100-7 with tyre Mitas 420 x 150 model 2 or with tyre Goodyear 6.00-6.5, P/N 607C41-1. Wheel of nose gear K 23-0000-7 with tyre Barum 350 x 135 model 2, or Wheel of nose gear K 51-1100-7 with tyre Mitas 350 x 135 or with tyre Goodyear 5.00-5, P/N 505C61-8		
22. Other Limitations:	The aircraft is approved for Day and Night VFR and IFR flights.		

IV. Operating and Service Instructions

1. Flight Manual:
   - In Czech language
     Doc. No. 005.011 — Letová příručka letounu ZLIN 143 L
   - In English language
     Doc. No. 005.012 — ZLIN 143 L Airplane Flight Manual
     Doc. No. 005.012.US — ZLIN 143 L Airplane Flight Manual
   - In German language
     Doc. No. 005.013 — Flughandbuch Z 143 L
2. Maintenance Manual:
   - In Czech language
     Doc. No. 005.021.1 — Příručka pro údržbu letounu ZLIN 143 L
   - In English language
     Doc. No. 005.022.1 — Z 143 L Airplane Maintenance Manual publication
3. Ilustrated parts catalogue:
   - In Czech language
     Doc. No. 005.040 — Katalog náhradních dílů letounu Z 143 L
   - In English language
     Doc. No. 005.040 — Ilustrated parts catalogue Z 143 L

V. Notes:

1. EASA TC No. EASA.A.028 has been issued for Type Z 143 L aircraft on February 4, 2005

Model Z 143 LSi

I. General

1.	Data Sheet No.:	94-08
2.	Model:	Z 143 LSi
3.	Airworthiness category:	Normal, (N) Utility, (U)
4.	Type Certificate Holder:	MORAVAN – AEROPLANES, a.s. Letiště 1578, 765 81 Otrokovice.
5.	Manufacturer:	MORAVAN – AEROPLANES, a.s. Letiště 1578, 765 81 Otrokovice.
6.	Application Date:	30.06.2000
7.	Certificate Date:	30.04.2004

II. Certification Basis

1.	Certification Basis:	FAR PART 23, Amdt. 2-41 (including)
2.	Special Conditions:	None
3.	Exemptions:	None
4.	Equivalent Safety Findings:	None
5.	Environmental Standards:	– ICAO Annex 16/I, Chapter 10 – FAR PART 36, App. G (Amdt. 36-20)

III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	The specification list of Aircraft Z 143 L No. S-I 143.0000		
2. Description:	The Z 143 LSi aircraft is four-seat, low wing, single-engine, cantilever monoplane.		
3. Equipment:	Master equipment list is stated in “Flight manual of the Zlin Z 143 LSi aircraft” with document No. Si 005.012 (Si 005.011)		
4. Dimensions:	Span:	10.136 m	
	Length:	7.577 m	
	Height:	2.910 m	
	Wing Area:	14.776 m^2	
5. Engine:			
5.1. Model:	TEXTRON Lycoming IO-540-C4D5		
5.2. Type Certificate:	1E4, Issued by FAA		
5.3. Limitations:	Max. Continuous power (MT)		
	Max. Power	175 kW	
	Max. Engine speed	2400 RPM	
	Max. Consuption by engine manufacturer	73.1 l/h	
	Max. Consuption measured at the aircraft	96 l/h	
	Max. Manifold pressure	MAX	
	Cruising (75 % MC)		
	Max. Power	130 kW	
	Max. Engine speed	2200 RPM	
	Max. Consuption by engine manufacturer	55 l/h	
	Max. Consuption measured at the aircraft	55.5 l/h	
	Max. Manifold pressure	84.4 kPa	
	Cruising (60 % MC)		
	Max. Power	104 kW	
	Max. Engine speed	2000 RPM	
	Max. Consuption by engine manufacturer	39 l/h	
	Max. Consuption measured at the aircraft	43 l/h	
	Max. Manifold pressure	82.9 kPa	

6. Propeller:

6.1. Model:	MTV-9-B/195-45a	
6.2. Type Certificate:	32.130/65, Issued by LBA	
6.3. Number of blades:	3	
6.4. Diameter:	1950 mm	
6.5. Sense of Rotation:	Right	

7. Fuel: Aviation gasoline 100L, 100LL (see service instruction of Engine manufacturer)

8. Oil: By average outside air temperature above + 27°C are recommended mineral oils with SAE 60 or dispersant oils with SAE 60.

By average outside air temperature above + 16°C are recommended mineral oils with SAE 50 or dispersant oils with SAE 40 or 50.

By average outside air temperature from - 1°C to + 32°C are recommended mineral oils with SAE 40 or dispersant oils with SAE 40.

By average outside air temperature from - 18°C to + 21°C are recommended mineral oils with SAE 30 or dispersant oils with SAE 40, 30 or 20W40.

By outside air temperature under - 12°C are recommended mineral oils with SAE 20 or dispersant oils with SAE 30 or 20W30.

9. Air Speeds:

Never exceed speed limit (category U, N), v_{NE}	306 km/h IAS
Normal operating speed limit (category U, N), v_{NO}	258 km/h IAS
Design manoeuvring speed limit (category U), v_A	224 km/h IAS
Design manoeuvring speed limit (category N), v_A	236 km/h IAS
Maximum flaps extended speed limit (category U, N), v_{FE}	190 km/h IAS

10. Load factors:

For category Utility (U)	+4.4 g, -1.76 g
For category Normal (N)	+3.8 g, -1.52 g

11. Maximum Operating Altitude:	For category Utility (U)		5760 m
	For category Normal (N)		4170 m
12. Weights:	Max. Take-off and Landing weight:		
	For category Utility (U)		1080 kg
	For category Normal (N) – Take-off weight		1350 kg
	For category Normal (N) – Landing weight		1280 kg
	Standard empty weight:		855 kg ± 3 %
13. Centre of Gravity Range:	21 % ÷ 34 % MAC		
14. Datum:	The back part of fire wall; from it are measured, for purpose assignation of Gravity Centre, all horizontal length.		
15. Mean Aerodynamic Cord (MAC):	1 489 mm (MAC position: front MAC point 368.4 mm behind the reference station).		
16. Leveling Means:	There is 600 mm below relative surface.		
17. Minimum Flight Crew:	1		
18. Number of seats:	4, (includes crew)		
19. Baggage/Cargo Compartments:	Upper baggage shelf		20 kg
	Lower baggage compartment		2 x 30 kg
	Max. Weight		60 kg
20. Control surface deflections:	Elevation deflection	up	30° ± 1°
		down	27° ± 1°
	Rudder deflection	right and left	30° ± 2°
	Ailerons deflection	up	21° ± 1°
		down	17° ± 1°
	Wing flaps positions	retracted	0°
		take-off	14° ± 1°
		landing	37° ± 1°
21. Wheels and Tyres:	Wheels of main gear K 22-0100-7 with tyre Barum 420 x 150 model 2, or Wheels of main gear K 22-3100-7 with tyre Mitas 420 x 150 model 2 or with tyre Goodyear 6.00-6.5, P/N 607C41-1.		
	Wheel of nose gear K 23-0000-7 with tyre Barum 350 x 135 model 2, or Wheel of nose gear K 51-1100-7 with tyre Mitas 350 x 135 or with tyre Goodyear 5.00-5, P/N 505C61-8		
22. Other Limitations:	The aircraft is approved for Day and Night VFR and IFR flights.		

IV. Operating and Service Instructions

1. Flight Manual:
   - In Czech language
     Doc. No. Si 005.011 — Letová příručka letounu ZLIN 143 LSi
   - In English language
     Doc. No. Si 005.012 — ZLIN 143 LSi Airplane Flight Manual

2. Maintenance Manual:
   - In Czech language
     Doc. No. 005.021.1 — Příručka pro údržbu letounu ZLIN 143 L
     Doc. No. Si 005.021.1 — Dodatek pro letoun ZLIN 143 LSi
   - In English language
     Doc. No. 005.022.1 — Z 143 L Airplane Maintenance Manual publication
     Doc. No. Si 005.022.1 — Supplement for ZLIN 143 LSi Airplane Maintenance Manual

3. Ilustrated parts catalogue:
   - In Czech language
     Doc. No. 005.040 — Katalog náhradních dílů letounu Z 143 L
     Doc. No. Si 005.040 — Dodatek katalogu Náhradních dílů letounu Z 143 LSi
   - In English language
     Doc. No. 005.040 — Ilustrated parts catalogue Z 143 L
     Doc. No. Si 005.040 — Supplement of Ilustrated parts catalogue of Z 143 LSi

V. Notes:

1. EASA TC No. EASA.A.028 has been issued for Type Z 143 L aircraft on February 4, 2005