



## ***European Aviation Safety Agency***

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**EASA**

**TYPE-CERTIFICATE  
DATA SHEET**

**EASA.A.028**

**ZLIN Z 43 Series**

**Type Certificate Holder:**

**ZLIN AIRCRAFT A.S.**

Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC

For Models: Z 43, Z 143 L, Z 143 LSi

Issue 6: 2 November 2010

EASA Form NR 90 CS-23  
Issue 01

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## **SECTION A: GENERAL, Z 43 Type Design**

### **AI. General**

1. a) Type: Z 43  
b) Model: ---
2. Airworthiness category: Normal (N)  
Utility (U)
3. Type Certificate Holder: ZLIN AIRCRAFT A.S.  
Letiště 1578  
765 81 Otrokovice  
Czech Republic
4. Manufacturer: MORAVAN n. p.  
Letiště 1578, 765 81 Otrokovice  
CZECHOSLOVAKIA  
S/N: 0001-0084  
MORAVAN a.s.  
Letiště 1578, 765 81 Otrokovice  
CZECH REPUBLIC  
S/N: 0085-0114
5. Certification Application Date: ---
6. CAA CZ Type Certificate Date: May 10, 1972
7. The EASA Type Certificate replaces the CAA CZ Type Certificate No. 72-03.

### **II. Certification Basis**

1. Reference Date for determining the applicable requirements: ---
2. (Reserved)
3. (Reserved)
4. Airworthiness Requirements: FAR PART 23, Amdt. 23-6 (including)
5. Requirements elected to comply: None
6. EASA Special Conditions: None
7. EASA Exceptions: None
8. EASA Equivalent Safety § 23.177(a) – Requirement for directional and

Findings:

lateral stability is not fully met. It is admitted with regard to the fact that both aileron and rudder control are of sufficient efficiency for instant stopping of aircraft rolling and leading to normal rectilinear flight.

§ 23.613(c); 23.615 – Materials and their characteristics according to ČSN and aviation specifications have been used for aircraft design and construction. It is admitted with regard to the fact that an intent of the requirement is met.

§ 23.905 – V 500 Propeller is certified according to BCAR, Section C Regulation instead of Far Part 35.

§ 23.955 – Requirement for flow rate of fuel supplied by fuel pump to the engine is not met. It is admitted with regard to the fact that fuel flow is constructed by fuel valve and is higher than engine consumption at maximum power.

§ 23.991 – The engine is equipped with high and low pressure pumps joined to a single aggregate. Any failure of this aggregate could cause contemporaneous failure of both supply and injection pumps. In such case, no emergency pump could ensure sufficient fuel supply to finish the flight without abnormal pilot's skills nor effort. A failure of low-pressure pump has not been occurred yet and its occurrence is extremely improbable.

§ 23.1013 (e), § 23.1019 – A by-pass is missing at the screen of oil tank outlet. It is admitted with regard to the fact that a surface of the screen is multiply bigger than cross section of the outlet fitting, thus safety level is kept.

§ 23.1183(a) – Requirement for hoses fire resistance is not met. It is admitted with regard to experiences from operation of similar aircraft of this category.

§ 23.1381 – § 23.1401 – Has not been proved, the aircraft is not admitted for night operation.

9. EASA Environmental Standards:

ICAO Annex. 16/I, Chapter 6  
FAR PART 36, App. G (Amdt. 36-20)

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

1. Type Design Definition: The specification list of Aircraft Z 43 No. S-43.0000;  
The specification drawing No. Z 43.0000
2. Description: The Z 43 aircraft is all-metal, four-seat, low wing,  
single-engine, cantilever monoplane.
3. Equipment: Master equipment list is stated in Airplane Flight  
Manual of the ZLIN Z 43 aircraft.
4. Dimensions:

Span:	9.760 m
Length:	7.750 m
Height:	2.910 m
Wing Area:	14.500 m <sup>2</sup>
5. Engine:
  - 5.1.1 Model: M 337 A
  - 5.1.2 Type Certificate: EASA approved (see Note 2)
  - 5.1.3 Limitations: Max. Take-off power (MT), and  
max. Continuous power (MC)

Power	154 kW (210 HP)
Engine rotational speed	2 750 RPM
Consumption	83 l/h
Manifold pressure	118 kPa

Continuous Cruising power (75 % MC)

Power	125 kW (170 HP)
Engine rotational speed	2 600 RPM
Consumption	54 l/h
Manifold pressure	98 kPa

Economic Cruising power (60 % MC)

Power	103 kW (140 HP)
Engine rotational speed	2 400 RPM
Consumption	42 l/h
Manifold pressure	90 kPa

or

  - 5.2.1 Model: M 337 AK
  - 5.2.2 Type Certificate: EASA approved (see Note 3)
  - 5.2.3 Limitations: Max. Take-off power (MT), and  
max. Continuous power (MC)

Power	154 kW (210 HP)
Engine rotational speed	2 750 RPM
Consumption	83 l/h
Manifold pressure	118 kPa

- |                        |   |                 |
|------------------------|---|-----------------|
|                        | Continuous Cruising power (75 % MC)   |                 |
|                        | Power   | 125 kW (170 HP) |
|                        | Engine rotational speed   | 2 600 RPM       |
|                        | Consumption   | 54 l/h          |
|                        | Manifold pressure   | 98 kPa          |
|                        | Economic Cruising power (60 % MC)   |                 |
|                        | Power   | 103 kW (140 HP) |
|                        | Engine rotational speed   | 2 400 RPM       |
|                        | Consumption   | 42 l/h          |
|                        | Manifold pressure   | 90 kPa          |
| 6. Load factors:       | For category Utility (U)  | +4.4 g, -1.76 g |
|                        | For category Normal (N)   | +3.8 g, -1.52 g |
| 7. Propeller:          |   |                 |
| 7.1 Model:             | AVIA V 500A   |                 |
| 7.2 Type Certificate:  | EASA approved (see Note 4)  |                 |
| 7.3 Number of blades:  | 2   |                 |
| 7.4 Diameter:          | 2 000 mm  |                 |
| 7.5 Sense of Rotation: | Anticlockwise in flight direction.  |                 |
| 8. Fluids:             |   |                 |
| 8.1 Fuel:              | Non-ethylated aviation gasoline, with minimum 72 octanes. Application of ethylated fuels is only permitted in case the T.E.L. content does not exceed the value of 0.06 % vol.<br>BL 78, BP 100L, Aviation gasoline AVGAS 80, AVGAS 100L, AVGAS 100LL (see service instruction of engine manufacturer). |                 |
| 8.2 Oil:               | The oil of kinematic viscosity of 20 mm <sup>2</sup> /s min. at 100°C, the carbon residue does not exceed 0,4 % of weight.<br>Recommended oil types:<br>running-in:<br>AEROSHELL Oil 100<br>MS-20<br>Continual service:<br>AEROSHELL Oil W 100<br>AEROSHELL Oil W 120 (tropic area)                     |                 |
| 8.3 Coolant:           | None  |                 |
| 9. Fluid capacities:   |   |                 |
| 9.1 Fuel:              | Z 43, serial number up to 0084 incl.:<br>Total: 230 litres (2 x 65 litres in main tanks and 2 x 50  |                 |

	litres in wing tip tanks)	
	Usable:	227 litres
	Z 43, serial number 0085 and subsequent:	
	Total: 220 litres (2 x 60 litres in main tanks and 2 x 50 litres in wing tip tanks)	
	Usable:	215 litres
9.2 Oil:	Minimum 7 litres – Maximum 12 litres	
9.3 Coolant system capacity:	None	
10. Air Speeds:	Never Exceed Speed Limit	$V_{NE}$
	- category U	307 km/h IAS
	- category N	286 km/h IAS
	Normal Operating Speed Limit	$V_{NO}$
	- category U, N	222 km/h IAS
	Design Manoeuvring Speed Limit	$V_A$
	- category U	230 km/h IAS
	- category N	248 km/h IAS
	Maximum Flaps Extended Speed Limit	$V_{FE}$
	- category U, N	197 km/h IAS
11. Maximum Operating Altitude:	For category Utility (U)	5 500 m
	For category Normal (N)	3 800 m
12. Allweather Operations Capability:	The aircraft is approved for VFR-Day flights.	
13. Maximum Weights:	Max. Take-off and Landing weight:	
	For category Utility (U)	1 000 kg
	For category Normal (N) – Take-off weight	1 350 kg
	For category Normal (N) – Landing weight	1 280 kg
	Standard empty weight:	730 kg $\pm$ 3 %
14. Centre of Gravity Range:	21.8 % $\div$ 36 % MAC (M.A.C. is 1 489 mm, 0 % M.A.C. is at 376 mm aft of reference datum)	
15. Datum:	The back part of fire wall; from it are measured, for purpose assignation of Gravity Centre, all horizontal length.	
16. Control surface deflections:	Elevator deflection up	$30^\circ \pm 1^\circ$
	down	$27^\circ \pm 1^\circ$
	Elevator trim tab up	$15^\circ \pm 1^\circ$
	down	$30^\circ \pm 2^\circ$
	Rudder deflection right and left	$30^\circ \pm 2^\circ$
	Ailerons deflection up	$21^\circ \pm 1^\circ$
	down	$17^\circ \pm 1^\circ$

Wing flaps positions	retracted	0°
	take-off	14° ± 1°
	landing	37° ± 1°

17. Levelling Means: Levelling points on left and right side of airplane fuselage to be levelled. Measurement plane to be min. 600 mm below.
18. Minimum Flight Crew: 1 (Pilot)
19. Maximum Passenger Seating Capacity: 4 (including crew)
20. (Reserved)
21. Baggage/Cargo Compartments:
- |                           |           |
|---------------------------|-----------|
| Upper baggage shelf       | 20 kg     |
| Lower baggage compartment | 2 x 30 kg |
| Max. Weight               | 60 kg     |
22. 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

## **AIV. Operating and Service Instructions**

### **Z 43 – 1<sup>st</sup> through 3<sup>rd</sup> series (up to S/N 0084 incl.):**

1. Flight Manual:
  - In Czech language                      Letová příručka Z 43, date of issue 1972
  - In English language                      Flight Manual Z 43, date of issue 1974
  - In German language                      Flugzeug – Betriebshandbuch Z 43, date of issue 1973
  
2. Technical Manual:
  - In Czech language                      Technický popis a návod k obsluze Z 43 date of issue 1972
  - In English language                      Technical Manual Z 43, date of issue 1973
  
3. Repair Manual:
  - In Czech language                      Opravářenská příručka letounu Z 43, date of issue 1980
  
4. Manual for Operation:
  - In Czech language                      Příručka pro provoz letounu Z 43 bez generálních oprav  
Doc. No. 233.071                      draku – část 1, část 2, prohlídka A, B, C  
date of issue 1997
  - In English language                      Manual for Operation of Z 43 Aircraft without Airframe  
Doc. No. 233.071                      Overhaul Part 1, Part 2, Revision A, B, C  
date of issue 1997
  
5. Spare Parts Catalogue:
  - In Russian, Czech, German and English language                      Katalog náhradních dílů letounu Z 43, date of issue 1975
  
6. Table of Dimensions, Limits and Clearances:
  - In Czech, German and English language                      Album rozměrů, tolerancí a vůlí Z 42, Z 42 M, Z 42 MU  
a Z 43, date of issue 1976  
Album der Abmessungen, der Toleranz und Spielangaben Z 42, Z 42 M, Z 42 MU, Z 43  
date of issue 1976  
Table of Dimensions, Limits and Clearances Z 42,

Z 42 M, Z 42 MU, Z 43, date of issue 1976

7. Instruments and aggregates:

- In Czech language                      Přístroje a agregáty použité na letounech Z 42M  
Doc. No. PRA.081                      Z 42MU, Z 142 a Z 43, date of issue 1996

**Z 43 – 4<sup>th</sup> series and subsequent (from S/N 0085 incl.):**

1. Flight Manual:

- In Czech language                      Letová příručka Z 43, date of issue 1991

2. Technical Manual:

- In Czech language                      Technický popis a návod k obsluze Z 43  
date of issue 1991

3. Repair Manual:

- In Czech language                      Opravárenská příručka letounu Z 43, date of issue  
1996

4. Manual for Operation:

- In Czech language                      Příručka pro provoz letounu Z 43 bez generálních  
oprav                                      draku – část 1, část 2, prohlídka A, B, C  
Doc. No. 233.071                      date of issue 1997
- In English language                      Manual for operation of Z 43 aircraft without  
airframe                                      overhaul Part 1, Part 2, Revision A, B, C  
Doc. No. 233.071                      date of issue 1997

5. Spare Parts Catalogue:

- In Czech and English language                      Katalog náhradních dílů letounu Z 43 (od 4. série)  
Catalogue of spare parts Z 43 (from 4<sup>th</sup> series)

6. Table of Dimensions, Limits and Clearances:

- In Czech, German and English language                      Album rozměrů, tolerancí a vůlí Z 42, Z 42 M, Z 42  
MU, Z 43, date of issue 1976  
Album der Abmessungen, der Toleranz und  
Spielangaben Z 42, Z 42 M, Z 42 MU, Z 43  
date of issue 1976  
Table of Dimensions, Limits and Clearances Z 42,

Z 42 M, Z 42 MU, Z 43, date of issue 1976

7. Instruments and aggregates:

- In Czech language      Přístroje a agregáty použité na letounech Z 42M  
  Doc. No. PRA.081      Z 42MU, Z 142 a Z 43, date of issue 1996

**AV. Notes:**

- Note 1: The following Z 43 aircraft have been converted by the aircraft manufacturer to the Model Z 143 L:  
Serial numbers: 0092, 0093
- Note 1A: The following Z 43 aircraft have been converted by the aircraft manufacturer to the Model Z 43M:  
Serial number: 0031
- Note 2: For the engine the EASA type certification standard includes the TCDS 72 - 05 (issued by CAA CZ) based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- Note 3: For the engine the EASA type certification standard includes the TCDS 94 - 06 (issued by CAA CZ) based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
- Note 4: For the propeller the EASA type certification standard includes the TCDS 73 - 03 (issued by CAA CZ) based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

## **SECTION B: Z 143 L**

### **BI. General**

1. a) Type Z 43  
b) Model: Z 143 L
2. Airworthiness category: Normal (N)  
Utility (U)
3. Type Certificate Holder: ZLIN AIRCRAFT a.s.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC
4. Manufacturer: MORAVAN a.s.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC  
S/N: 0001-0012, 0014-0029  
  
MORAVAN – AEROPLANES, a.s.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC  
S/N 0030-0032, 0034-0041, 0043-0054  
  
MORAVAN AVIATION, s.r.o.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC  
S/N 0056-0058
5. Certification Application Date: October 01, 1991
6. CAA CZ Type Certificate Date: June 10, 1994
7. The EASA Type Certificate replaces the CAA CZ Type Certificate No. 94-08.

### **BII. Certification Basis**

1. Reference Date for determining the applicable requirements: October 01, 1991

2. (Reserved)
3. (Reserved)
4. Airworthiness Requirements: FAR PART 23, Amdt. 23-41 (including)
5. Requirements elected to comply: None
6. EASA Special Conditions: None
7. EASA Exemptions: None
8. EASA Equivalent Safety Findings: None
9. EASA Environmental Standards: ICAO Annex. 16/I, Chapter 10  
FAR PART 36, App. G (Amdt. 36-20)

### **BIII. 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 all-metal, four-seat, low wing, single-engine, cantilever monoplane.
3. Equipment: Master equipment list is stated in Airplane Flight Manual of the ZLIN Z 143 L aircraft.
4. Dimensions:

Span:	10.136 m
Length:	7.577 m
Height:	2.910 m
Wing Area:	14.776 m <sup>2</sup>
5. Engine:
  - 5.1. Model: TEXTRON Lycoming O-540-J3A5
  - 5.2. Type Certificate: EASA approved (see Note 1)
  - 5.3. Limitations:

Max. Take-off power (MT), and Max. Continuous Power (MC)	
Power	175 kW
Engine rotational speed	2 400 RPM
Consumption by engine manufacturer	74 l/h
Consumption measured at the aircraft	96 l/h
Manifold pressure	MAX
Continuous Cruising power (75 % MC)	
Power	130 kW
Engine rotational speed	2 200 RPM

RPM

Consumption by engine manufacturer	53 l/h
Consumption measured at the aircraft	55.5 l/h
Manifold pressure	84.6 kPa

Economic Cruising power (60 % MC)

Power	104 kW
Engine rotational speed	2 000
RPM	
Consumption by engine manufacturer	38.6 l/h
Consumption measured at the aircraft	44 l/h
Manifold pressure	78.6 kPa

6. Load factors:	For category Utility (U)	+4.4 g,	-
		1.76 g	
	For category Normal (N)	+3.8 g,	-
		1.52 g	

7. Propeller:

7.1 Model:	MTV-9-B/195-45a
7.2 Type Certificate:	EASA approved (see Note 2)
7.3 Number of blades:	3
7.4 Diameter:	1950 mm
7.5 Sense of Rotation:	Clockwise in flight direction.

8. Fluids:

8.1 Fuel: Aviation gasoline 100L, 100LL (see service instruction of engine manufacturer)

8.2 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.

8.3 Coolant: None

9.	Fluid capacities:		
9.1	Fuel:	Category U: Total – 122 litre Usable – 116 litre Category N: Total – 224 litre Usable – 216 litre	
9.2	Oil:	Minimum 5.7 litres – Maximum 11.4 litres	
9.3	Coolant system capacity:	None	
10.	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
11.	Maximum Operating Altitude:	For category Utility (U) For category Normal (N)	5 760 m 4 170 m
12.	Allweather Operations Capability:	VFR-Day and VFR-Night IFR, not in icing conditions	
13.	Maximum Weights:	Take-of: Category Utility (U) Category Normal (N) Landing: Category Utility (U) Category Normal (N) Standard empty weight:	1 080 kg 1 350 kg 1 080 kg 1 280 kg 855 kg $\pm$ 3 %
14.	Centre of Gravity Range:	21 % $\div$ 34 % MAC (M.A.C. is 1 489 mm, 0% MAC is at 368 mm aft of reference datum)	
15.	Datum:	The back part of fire wall; from it are measured, for purpose assignation of Gravity Centre, all horizontal length.	
16.	Control surface deflections:	Elevator deflection up down Rudder deflection right and left Ailerons deflection up down	$30^\circ \pm 1^\circ$ $27^\circ \pm 1^\circ$ $30^\circ \pm 2^\circ$ $21^\circ \pm 1^\circ$ $17^\circ \pm 1^\circ$

	Wing flaps positions	retracted	0°
		take-off	14° ± 1°
		landing	37° ± 1°
17. Leveling Means:	Levelling points on left and right side of airplane fuselage to be levelled. Measurement plane to be min. 600 mm below.		
18. Minimum Flight Crew:	1 (Pilot)		
19. Maximum Passenger Seating Capacity:	4 (including crew)		
20. (Reserved)			
21. Baggage/Cargo Compartments:	Upper baggage shelf		20 kg
	Lower baggage compartment		2 x 30 kg
	Max. Weight		60 kg
22. 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		

## **BIV. Operating and Service Instructions**

### 1. Flight Manual:

- In Czech language                      Letová příručka letounu ZLIN 143 L  
  Doc. No. 005.011
- 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                    Flughandbuch Z 143 L  
  Doc. No. 005.013

### 2. Maintenance Manual:

- In Czech language                      Příručka pro údržbu letounu ZLIN 143 L  
  Doc. No. 005.021.1
- In English language                    Z 143 L Airplane Maintenance Manual  
  Doc. No. 005.022.1                    publication

### 3. Illustrated parts catalogue:

- In Czech language                      Katalog náhradních dílů letounu Z 143 L  
  Doc. No. 005.040
- In English language                    Illustrated parts catalogue Z 143 L  
  Doc. No. 005.040

## **BV. Notes:**

Note 1:        For the engine the EASA type certification standard includes the TCDS E-295 (issued by FAA) based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

Note 2:        For the engine the EASA type certification standard includes the TCDS 23.130/65 (issued by LBA) based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

## **SECTION C: Z 143 LSi**

### **CI. General**

1. a) Type: Z 43  
b) Model: Z 143 LSi
2. Airworthiness category: Normal (N)  
Utility (U)
3. Type Certificate Holder: ZLIN AIRCRAFT a.s.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC
4. Manufacturer: MORAVAN – AEROPLANES, a.s.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC  
S/N 0042, 0055  
  
MORAVAN – AVIATION, s.r.o.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC  
S/N 0060  
  
ZLIN AIRCRAFT a.s.  
Letiště 1578  
765 81 Otrokovice  
CZECH REPUBLIC  
S/N: 0059, 0061 and up
5. Certification Application Date: June 30, 2000
6. CAA CZ Type Certificate Date: April 30, 2004
7. The EASA Type Certificate replaces the CAA CZ Type Certificate No. 94-08.

### **CII. Certification Basis**

1. Reference Date for determining the applicable requirements: September 12, 2000

2. (Reserved)
3. (Reserved)
4. Airworthiness Requirements: FAR PART 23, Amdt. 23-41 (including)
5. Requirements elected to comply: None
6. EASA Special Conditions: None
7. EASA Exemptions: None
8. EASA Equivalent Safety Findings: None
9. EASA Environmental Standards: ICAO Annex 16/I, Chapter 10  
FAR PART 36, App. G (Amdt. 36-20)

### **CIII. 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 all-metal, four-seat, low wing, single-engine, cantilever monoplane.
3. Equipment: Master equipment list is stated in Airplane Flight manual of the Zlin Z 143 LSi aircraft.
4. Dimensions:
 

Span:	10.136 m
Length:	7.577 m
Height:	2.910 m
Wing Area:	14.776 m <sup>2</sup>
5. Engine:
 

5.1. Model:	TEXTRON Lycoming IO-540-C4D5	
5.2. Type Certificate:	EASA Approved (see Note 1)	
5.3. Limitations:	Max. Take-off power (MT) ), and Max. Continuous Power (MC) Power	175 kW
	Engine rotational speed	2 400 RPM
	Consumption by engine manufacturer	73.1 l/h
	Consumption measured at the aircraft	96 l/h
	Manifold pressure	MAX
	Continuous Cruising power (75 % MC) Power	130 kW
	Engine rotational speed	2 200 RPM
	Consumption by engine manufacturer	55 l/h
	Consumption measured at the aircraft	55.5 l/h

	Manifold pressure	84.4 kPa
	Economic Cruising power (60 % MC)	
	Power	104 kW
	Engine rotational speed	2 000 RPM
	Consumption by engine manufacturer	39 l/h
	Consumption measured at the aircraft	43 l/h
	Manifold pressure	82.9 kPa
6. Load factorst:	For category Utility (U)	+4.4 g, -
	1.76 g	
	For category Normal (N)	+3.8 g, -
	1.52 g	
7. Propeller:		
7.1 Model:	MTV-9-B/195-45a	
7.2 Type Certificate:	EASA approved (see Note 2)	
7.3 Number of blades:	3	
7.4 Diameter:	1 950 mm	
7.5 Sense of Rotation:	Clockwise in flight direction.	
8. Fluids:		
8.1 Fuel:	Aviation gasoline 100L, 100LL (see service instruction of engine manufacturer)	
8.2 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.	
8.3 Coolant:	None	
9. Fluid capacities:		
9.1 Fuel:	Category U: Total	– 122 litre
	Usable	– 116 litre
	Category N: Total	– 224 litre
	Usable	– 216 litre

9.2 Oil:	Minimum 5.7 litres – Maximum 11.4 litres		
9.3 Coolant system capacity:	None		
10. 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
11. Maximum Operating Altitude:	For category Utility (U)		5 760 m
	For category Normal (N)		4 170 m
12. Allweather Operations Capability:	VFR-Day and VFR-Night IFR, not in icing conditions		
13. Maximum Weights:	Take-off:	Category Utility (U)	1 080 kg
		Category Normal (N)	1 350 kg
	Landing:	Category Utility (U)	1 080 kg
		Category Normal (N)	1 280 kg
	Standard empty weight:		855 kg $\pm$ 3 %
14. Centre of Gravity Range:	21 % $\div$ 34 % MAC (M.A.C. is 1 489 mm, 0 % M.A.C. is at 368.4 mm aft of reference datum)		
15. Datum:	The back part of fire wall; from it are measured, for purpose assignation of Gravity Centre, all horizontal length.		
16. Control surface deflections:	Elevator deflection	up	$30^\circ \pm 1^\circ$
		down	$27^\circ \pm 1^\circ$
	Rudder deflection	right and left	$30^\circ \pm 2^\circ$
	Ailerons deflection	up	$21^\circ \pm 1^\circ$
		down	$17^\circ \pm 1^\circ$
	Wing flaps positions	retracted	$0^\circ$
		take-off	$14^\circ \pm 1^\circ$
		landing	$37^\circ \pm 1^\circ$
17. Leveling Means:	Levelling points on left and right side of airplane fuselage to be levelled. Measurement plane to be min. 600 mm below.		

18. Minimum Flight Crew: 1 (Pilot)
19. Maximum Passenger Seating Capacity: 4 (including crew)
20. (Reserved)
21. Baggage/Cargo Compartments:
- |                           |           |
|---------------------------|-----------|
| Upper baggage shelf       | 20 kg     |
| Lower baggage compartment | 2 x 30 kg |
| Max. Weight               | 60 kg     |
22. 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



## **ADMINISTRATIVE SECTION**

### I Acronyms

N/A

### II Type Certificate Holder Record

Current:

ZLIN AIRCRAFT a.s.

Letiště 1578

765 81 Otrokovice

CZECH REPUBLIC

Former:

MORAVAN n. p.

Letiště 1578, 765 81 Otrokovice

CZECHOSLOVAKIA

MORAVAN a.s.

Letiště 1578, 765 81 Otrokovice

CZECH REPUBLIC

MORAVAN – AEROPLANES, a.s.

Letiště 1578

765 81 Otrokovice

CZECH REPUBLIC

MORAVAN – AVIATION, s.r.o.

Letiště 1578

765 81 Otrokovice

CZECH REPUBLIC

### III Change Record

<b>Issue</b>	<b>Date</b>	<b>Changes</b>
Issue 1	04-Feb-2005	Transfer of ZLIN Z 143 L and Z 143 LSi Type Design to EASA
Issue 2	14-Dec-2006	Transfer of ZLIN Z 43 as basic Type Design under this TC / TCDS
Issue 3	02-May-2007	Introduction of changed Company Name of Moravan

Issue 4	24 Aug 2009	Change of Company name
Issue 5	23 July 2010	Editorial corrections and revision into standard EASA TCDS format
Issue 6	2 November 2010	Corrections to B.I.4 and C.I.4 to specify actual serial numbers manufactured by each company and to exclude airframes used specifically for test purposes.