

# ***European Aviation Safety Agency***

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**EASA**

**TYPE-CERTIFICATE  
DATA SHEET**

## **Zeppelin LZ N07**

*Normal and Commuter Airship*

**Type Certificate Holder:**

**Zeppelin Luftschifftechnik GmbH & Co KG**  
Friedrichshafen, Germany

**Manufacturer:**

**Zeppelin Luftschifftechnik GmbH & Co KG**  
Friedrichshafen, Germany

Variants:

LZ N07-100

Issue 1: 28 April 2005

Issue 2: 26 July 2007

Issue 3: 17 June 2008

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## I. General

1. Data Sheet No. EASA.AS.001	Issue Date: 17 June 2008
2. Type/Variant or Model	LZ N07-100
3. Airworthiness Category	Normal and Commuter Category
4. Type Certificate Holder	Zeppelin Luftschifftechnik GmbH & Co KG Allmannsweilerstraße 132 88046 Friedrichshafen Germany
5. Manufacturer	Zeppelin Luftschifftechnik GmbH & Co KG Allmannsweilerstraße 132 88046 Friedrichshafen Germany
6. LBA Type Certification Date	26 April 2001, LBA TC No. 9004
7. LBA Application Date	15 March 1994
8. LBA Recommendation Date	n/a
9. EASA Type Certification Date	28 April 2005
10. TCDS History	This EASA TCDS replaces the German TCDS Nr. 9004 Issue 3 dated 21 September 2003 issued by the LBA

## II. Certification Basis

1. Reference Date for Determining the Applicable Requirements	15 March 1994
Certification Basis	Defined by "Type Certification Basis LBA, Document 07 TD 01 004 issue A-03" or later valid versions
Airworthiness Requirements	Airworthiness Requirements for Normal and Commuter Category Airships (LFLS), issue September 1995
	<u>Additional Requirements:</u>
	CRI C-1/Load      Reliable Load Validation acc. FAR 25.301(b)
	CRI D-1/Flam      Flammability of passenger seat cushions
	CRI D-13/Ditching      Floating Analysis
	CRI D-15/Heating      Installation of Fuel Burning Heater Equipment (Option)
	CRI E-1/Prop      Remote driven thrust vector propulsion system
	CRI F-1 HIRF      High intensity radiated fields (HIRF)
	CRI F-1/SWAB      SW Qualification: Transition to RTCA DO-178B/ED-12B
	CRI F-3/ASIC      Electronic Hardware Design Assurance (ASIC)
	CRI F-4/LCD      Liquid Crystal Displays (LCD)
	CRI F-5/COTS      Use of Commercial Off-The Shelf Software Avionics

Interpretative Material

	CRI D-2/Belt	Two point shoulder harness for passenger seat
	CRI D-4/ Composite	Composite Aircraft Structure
	CRI D-5/Flight Controls	Interpretation of dual redundant
	CRI D-12/C39b	Seats shall be comply with TSO C39b approved by ZLT
	CRI D-14/ Evacuation	Emergency Evacuation Demonstration and Procedure
	CRI D-16/Toilet	Toilet installation in Cabin
Elected to Comply Requirements	CRI A-1/Noise	External noise certification LuftVG §2
	CRI A-3/CVFR	Minimum equipment LuftBO/FSAV/CVFR/Cabin Safety
	CRI A-4/VFR /CVFR-Night Operation	Minimum equipment VFR/CVFR-Night Operation
Special Conditions	CRI B-3/ Limiter AIU	Speed Control/ AIU/ Limiter
	CRI B-4/Longitude	Longitudinal Control $\pm 30^\circ$
	CRI D-6/ Controls Location	Controls Location with Respect to Propeller Hub
	CRI D-7/ Controls Arrangement	Cockpit Controls Arrangement
	CRI D-8/Exit	Additional exit for commuter equivalent safety
	CRI D-10/ Env. Defl.	Rapid Deflation Provisions
	CRI F-6/LED	LED Colour for EPI-PU
Exemptions	none	
Equivalent Level of Safety Findings	CRI B-1/Single Engine fail	Single Engine Failure
	CRI B-2/All Engine out	All Engine Failure
	CRI D-9/Envelope Design	Envelope Design
	CRI D-11/ Pressure System	Pressure System
	CRI E-2/Auxiliary Vectoring	Auxiliary Thrust Vectoring
	CRI F-7/Light	Bow Light Dihedral Angle
Environmental Standards	German noise requirements LVL for Aircraft, dated 1 July 2003, part IV, second section <i>Lärmvorschrift für Luftfahrzeuge (LVL) vom 1. Juli 2003, Teil IV, zweiter Abschnitt</i>	

### III. Technical Characteristics and Operational Limitations

1. Type Design Definition Airship Configuration List / Type Certification Definition, Document 07 TD 01 003 in the latest valid version
2. Description Airship with pressurised envelope and rigid framework inside the envelope made of triangular carbon-fibre frames and three aluminium longerons braced by aramide cables, three engines with vectored thrust propellers and one lateral propeller, three carbon-fibre stabilizers in an inverted Y-configuration, 2-channel Fly-by-Wire flight control system for the aerodynamic surfaces and vectored thrust units, carbon-fibre cabin with two doors, forward and aft ballonet with automatically and manually operated air valves, two automatically and manually operated helium valves at the right side and one emergency helium valve at the top of the envelope.  
All the main components of the airship such as cabin, empennage and engines are mounted on the rigid structure.
3. Equipment Minimum equipment as defined by document 07 EQ 34 002 and 07 BF 25 602 in the latest valid version
4. Dimensions

Volume	envelope	: 8,450 m <sup>3</sup>
	ballonet fwd	: 600 m <sup>3</sup> , or 410 m <sup>3</sup> (Option B10/20)
	ballonet aft	: 1,600 m <sup>3</sup> , or 1,065 m <sup>3</sup> (Option B20)
Length		: 75.1 m
Diameter		: 14.2 m
Maximum width		: 19.5 m
Height		: 19.4 m
5. Powerplant
  - 5.1 Engine

Type designation	: Textron-Lycoming IO-360-C1G6
LBA-TCDS number	: 4596
Number	: 3
Maximum permissible RPM	: 2,700 min <sup>-1</sup>
Maximum permissible continuous RPM	: 2,700 min <sup>-1</sup>
  - 5.2 Vectored Thrust Propeller

Type designation	: Hoffmann HO-V373()-D
LBA-TCDS number	: 32.130/96
Number	: 3
Propeller data	: 2.7 m three-bladed, pitched, wood composite with lightning protection

### 5.3 Lateral Thrust Propeller

Type designation : Hoffmann HO-V123F-0GV  
LBA-TCDS number : 32.130/17  
Number : 1  
Propeller data : 2.2 m three-bladed, pitched,  
wood composite with lightning  
protection

## 6. Fluids

### 6.1 Fuels

Propulsion : Right/Left engine tank : each 420 L  
Engine Aft engine tank : 320 L  
Fuel : AVGAS 100LL

### 6.2 Lubricants

Propulsion : see Airship Maintenance Manual  
engine

## 7. Air Speeds

Manoeuvring Speed  $V_A$  : 83 km/h  
Never Exceed Speed  $V_{NE}$  : 130 km/h  
Limitations see Airship Flight Manual  
Deflection angle of control surface

All control surfaces :  $\pm 20^\circ$

## 8. Maximum Mass

Maximum airship EQ (norm condition) mass : 7,650 kg  
Maximum gondola mass : 2,690 kg  
Maximum static heaviness  
Take-off and landing : 400 kg  
Inflight : 500 kg  
Maximum static lightness : -200 kg

## 9. Minimum Flight Crew

1 Pilot

## 10. Occupants

Maximum : 15 Occupants  
Pilot seats : 2 Pilots  
Passenger seats max. : 13 Passengers

## 11. Payload

Gondola payload max. : 1,040 kg

## 12. Life Limit Parts

See Airship Maintenance Manual

## 13. Lifting gas

Helium  
Maximum permissible lifting gas pressure : 600 Pa  
Minimum lifting gas pressure : 300 Pa

## 14. Buoyancy Centre

34.15 m aft of bow

## 15. Maximum Operating Altitude

Standard configuration : 3,048 m  
Optional ballonet : see AFM Section 6  
configuration Weight & Balance

## IV. Operating and Service Instructions

### 1. Operating Instructions

- Airship Flight Manual and Pilot's Operating Handbook, Document 07 ML 01 200, LBA-approved, as well as all subsequent approved supplements and changes.
- Hoffmann : - Operating and Maintenance Manual No. E709, in its latest valid issue

- Betriebs- und Wartungshandbuch  
Nr. 287, in its latest valid issue
  - Lycoming Engine : Lycoming Operator`s Manual No. 60297-12(), in its latest valid issue
2. Service Instructions
- Airship Maintenance Manual Document 07 ML 05 200 as well as all supplements and changes
  - Hoffmann Propeller : - Propeller HO-V373 Overhaul Manual No. E710, in its latest valid issue
  - Blade Overhaul Manual No. E573, in its latest valid issue
  - Lycoming Engine : Lycoming Overhaul Manual No. 60294-7(), in its latest valid issue

#### **V. Notes**

1. Manufacturing is confined to industrial production
2. Certified for day / night-VFR flights
3. Certified for commercial passenger transport
4. For registration the Noise Requirements as valid on the day of the application are to be applied
5. The Certification is eligible from serial-no. 002 onwards

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