



MORAVAN AVIATION

ZLIN 242 L Primary/Advanced Training and Aerobatic Aircraft



High Quality, Extremely Responsive, Very Rugged
Construction - our tradition since 1934

MORAVAN AVIATION

MANUFACTURER OF **ZLIN** ALL-METAL TRAINING, TOURING AND AEROBATIC AIRCRAFT



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Czech Republic



www.zlinaircraft.cz

MORAVAN AVIATION s.r.o. is Czech aircraft manufacturer with the long tradition in production of training, sporting, aerobatic, utility and touring aircraft bearing the name ZLIN which were delivered to over 60 countries worldwide. Since 1934 more than 5,600 aircraft have left the company production facilities.

The present production of ZLIN airplanes which are **best known for their great flight characteristics** includes the latest modifications to all-metal Z 40 series airplane with piston engines, the Z 242 L, Z 142 C, Z 143 L and Z 143 LSi.

Our **ZLIN Z 242 L training and fully aerobatic** two seater, is modernized version of Z 142 C aircraft (still in production) powered by a 200 HP Lycoming engine. This aircraft is able to perform aerobatic maneuvers +6 -3,5 g and in conjunction with **well-balanced controls** and its **IFR** capability for an affordable price moves it ahead of any other aircraft available today. It's maneuverability makes it an attractive machine not only for aviation enthusiasts. More, thanks to **Acceleration Monitoring Unit (AMU-1)** installed on the Z 242 L as a standard we were able to extend the aircraft's fatigue life (for example to **11.000 hours** at one of the leading flight schools in CANADA).

Z 137T



Z 242 L



Z 143 L



Delightful, light, crisp and responsive handling qualities best describe the four seater **ZLIN Z 143 L**. With its 235HP Lycoming engine, **autopilot** and IFR capabilities this aircraft is demanded not only for pilot training but also for cross country, business and family flying purposes.



Z 242 L

Ability to modify this aircraft to the two seats long range version in just a couple of hours is demanded option. And **new ZLIN Z 143 LSi with fuel injection system** is just coming to sale.

To provide the best services to all of our customers flying ZLIN aircraft or wishing to own one, MORAVAN AVIATION s.r.o. is expanding a worldwide **ZLIN Distributor** network and **ZLIN Authorized Service Center** network. Contact us if you were interested in being a part of the team behind the ZLINs in your country.

We believe that there is a big potential in the small aircraft market, both in civil and military sectors for the aircraft whose aerobatic versions have **6 times won a Title of The Absolute World Aerobatics Champion**.



MORAVAN AVIATION

References of military and civilian customers



I.G.R.U.A.



HUNGARY Air Force



POLAND Aeroclub



SLOVAKIA Aeroclub



ZLIN Z 242 L

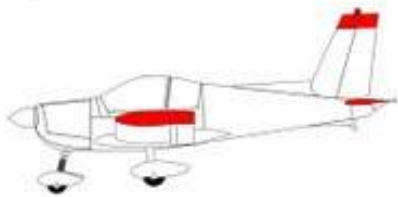
Performance & Specification



Tropas Guarda Fronteras de CUBA



Army of the Arab Republic of EGYPT



ANGOLA Air Force



Fuerza Aerea del PERU



CZECH Air Force



MACEDONIA Air Force



YEMEN Air Force



ALGERIA Air Force



Armada de MÉXICO



East GERMANY Air Force



ISRAEL Elbit System



SLOVENIA Air Force



ZLIN Z 242 L Performance & Specification

...FROM THE PRESS...

"With our expert aerobatic instructor, we have taken **aerobatic experts class** as well as beginners and taught them new tricks. Side-by-side seats really provide the instructor the ability to judge the student's mental as well as physical condition during the lessons. ... not only that, but ZLIN is **built to military specifications and is very stout.**"
– Craig Johnston



Z 242 L of Peruvian Air Force



Z 242 L at Flight Safety Int. Air School, USA

"I have previously owned an aerobatic ZLIN Z 242 L and recently upgraded to the Z 143 L. Having owned, operated and flown dozens of other aircraft over the past thirty years I have found the ZLIN to **have the lightest, most well-balanced controls and delightful flying characteristics.**" – Spencer Lane

"..... we could find **not a single bit of paint run or overspray in the complex scheme.**" – Private Pilot Magazine

"My plane is being serviced by an extremely qualified airplane inspector/ mechanic with 25 years of experience. He said this is the **best built plane he has ever seen** from another country. When I fly with my wife and my son I am betting everything on this special machine." – Robert Blazer, USA



Series of Z 242 Ls in service with the Mexican Navy



ZLIN Z 242 L Performance & Specification

Moravan Aviation s.r.o. a company with tradition of building small airplanes **since 1934** introduces a current production of a training and **aerobatic** airplane ZLIN Z 242 L.

Based on previous types Z 42 / Z 142 / Z 43, of which more than 750 pieces were made, the ZLIN Z 242 L has been in serial production since 1992.

The plane is designed for:

- **Basic and advanced training in civil or military air schools** (side-by-side seats provide the instructor the ability to judge the student's mental as well as physical condition during the lessons. More, the craftsmanship of the people behind the ZLIN make the airplane comply with most military specification and is very rugged)
- **Night and IFR training and flying** (great flight characteristics and additional instruments make the ZLIN easy to fly at night or low visibility conditions)
- **Aerobatic flights and aerobatic training** (great flight characteristics are appreciated not only by professional pilots)
- **Optional glider and banner towing**

The plane can be operated in Normal and Aerobatic categories, within load limitations of +6 / -3.5 g. **OR NOW** customer has a choice of buying the aircraft certified **only in Utility Category**. Since the aircraft will be then operated on the base of periodic inspections without general overhauls, it will **lower the aircraft's operational expenses** and also, based on information from AMU Unit, it may extend its lifetime.

The plane is **EASA certified** in all countries of European Union plus in Canada, Australia, USA, Israel, India, Argentina and Macedonia.



GENERAL DESCRIPTION OF THE PLANE

The Z 242 L is a single engine, two seat, low wing, cantilever monoplane of **whole metal structure**. Unlike the airplanes fully made of composite materials ZLIN is built to provide great ability to access any vital part of the airplane **for easy check and repairs**. Operating expenses are kept low thanks to replaceability of the parts.

The side-by-side seating offers **incredible visibility** from the canopy to both student and instructor. Both seats contain energy-absorbing materials for even higher safety. The airplane is powered by a world premier TEXTRON LYCOMING piston engine, type AEIO-360-A1B6 giving the plane more than sufficient **power of 200 hp**. For all aerobatic needs, for improved fuel efficiency and better performance, there is a three-blade, **hydraulic pitch controlled, constant-speed propeller**, Mühlbauer type MTV-9-B-C/C-188-18a (wooden) or Hartzell HC-C3YR-4BF/FC 6890 (metal).

Without any power limitation the aircraft meets requirements of FAR PART 23 and ICAO Annex 16, Chapter 10 regulations on noise.

FUSELAGE

The fuselage is of a mixed construction. The central fuselage **structure welded of steel tubes** is covered with a composite fairing. The rear part is semimonocoque. The occupants seat arrangement **enables the use of back-type parachutes**. The seats in "side-by-side" arrangement are longitudinally adjustable to 4 positions. The main pilot's seat intended for solo flight is the left one. There is a baggage compartment behind the seats for up to 20kg load. The **forward sliding canopy** makes it **easy to enter and exit** the airplane and for safety of passengers is provided with **emergency release system**. It may be locked in partly opened position.



ZLIN Z 242 L

Performance & Specification

WING

The wing is of all-metal structure with single main spar and auxiliary spar. The fuselage part of the **main spar is nitrogen - pressurized** with pressure indicator on the instrument panel - simple **safety feature** very appreciated by every pilot. The wing shape is rectangular. The wing skin is of light-alloy aluminum plated sheets. The wing flaps and ailerons are slotted, all-metal, and identical in construction and dimensions therefore exchangeable. The ailerons are provided with fixed balance tabs all with other controls making the plane to be **extremely responsive**. The wing ends are terminated with **composite wing tips to reduce the induced drag**.

TAIL SURFACE

All parts are of a strong all-metal cantilever structure covered with light-alloy sheets. Both **the rudder and the elevator are partially mass-balanced** helping the pilot to take the control of the plane even in worse flight condition. The elevator is provided with two balance tabs, the one being **controllable for longitudinal trim**. That way you can fly with "two fingers" all day long without plane "wondering around". The rudder is provided with a fixed balance tab.

LANDING GEAR

The non-retractable, tricycle landing gear consists of the main landing gear and the nose gear. The main gear flat steel springs will absorb the energy during even the hardest landings of your own or your students. The main landing gear wheels are equipped with hydraulic **disc-brakes with automatic clearance adjustment**. Thanks to its structure the landing gear is also designed for **landing on grassy strips**. Brake-actuator pedals located on rudder pedals control the left and right brake separately. The parking brake actuates both wheel brakes simultaneously. Nose landing gear is provided with a hydropneumatic **shock absorber and with a "shimmy" damper**. The nose wheel is controlled by means of rudder pedals.

CONTROL SYSTEM

The aircraft is provided with dual controls. The control system includes elevator and aileron **stick-type control**, rudder control, nose wheel control, wing flaps control, trim control, engine and propeller control. For airplane's better response the **elevator and ailerons are tie-rod operated**, the rudder is tie-rod and additional cable operated. The nose wheel control is coupled with the rudder control. For our smaller size customers each airplane is equipped with **longitudinally adjustable pedals** (both left and right). Wing flaps and trim tabs are mechanically controlled. The engine is controlled by a throttle push-pull rod and a mixture handle. The propeller speed is controlled by a push-pull rod.

POWERPLANT

The TEXTRON Lycoming AEIO-360-A1B6 aircraft engine is of a piston-type, four-stroke, air-cooled, flat four-cylinder rotating clockwise. The engine has no reduction gear box and is **designed for execution of aerobatic maneuvers** and inverted flights. The MTV-9-B-C/C-188-18a is a three-blade hydraulic pitch control, **constant-speed propeller**. The propeller blades are made of wood with composite skin.

FUEL AND OIL SYSTEM

The main fuel tanks are situated in the wing leading edge with a capacity of 2 x 60 liters (2 x 16 US gallons). The auxiliary fuel tanks are attached to the wing tips (2 x 55 liters / 2 x 14.5 US gallons). The oil tank is an integral part of the engine.

ELECTRICAL SYSTEM

The electrical system is of single-wire type (+ pole). The nominal DC voltage is 28 V. The **primary power source** is the 1600 W generator (alternator). As an **auxiliary power source** serves a 19 Ah capacity CONCORDE battery.





ZLIN Z 242 L Performance & Specification

The **emergency power source** is secured by a second battery to guarantee internal power supply for emergency landing. Airplane is also equipped with external power supply socket. Circuit breaker switches protect all electrical systems and equipment.

AVIONICS

Avionics packages based on Bendix/King Silver Crown equipment. Available in options.

GUARANTEE AND WARRANTY

MORAVAN AVIATION s.r.o. provides warranty, on the assumption of normal use of the plane, of **1000 flight hours or for two years period** after acceptance, whichever comes first.

MORAVAN AVIATION s.r.o. guarantees technical service for a lifetime of 5.500 flight hours for the airframe with respect to operational limitations and maintenance procedures. **The service period will be prolonged** based on operational and technical structure conditions. For this purpose our technicians teamed up with Aeronautical Research and Test Institute in Czech Republic and developed **Acceleration Monitoring Unit** allowing us to monitor flight loads during operation.

The guarantees are 24 months for engine under Lycoming warranty card, 12 months for propeller under Mühlbauer warranty card and 18 months for Honeywell (Bendix King) avionics under Honeywell (Bendix King) warranty card.

TECHNICAL SERVICES

All technical information concerning the plane manufactured by MORAVAN AVIATION s.r.o. are distributed by bulletin service. Pilot and technician training of customer's staff is organized at MORAVAN AVIATION s.r.o. training center.





ZLIN Z 242 L

Performance & Specification

Engine

Manufacturer	TEXTRON Lycoming, USA
Type	AEIO-360-A1B6

Power

max take-off 149 kW	200 HP	2700 RPM
max continuous 149 kW	200 HP	2700 RPM
Cruising 75 % MC 112 kW	150 HP	2450 RPM
Cruising 65% MC 97 kW	130 HP	2350 RPM

Propeller

Manufacturer	MT Propeller, Germany	Hartzell Propeller, USA
Type	MTV 9-B-C/C-188-18a	HC-C3YR-4BF/FC 6890
Number of blades	3	3
Diameter	1880 mm	1780 mm

Aircraft Dimensions

Wing span	9.34 m	30.64 ft
Length	6.94 m	22.77 ft
Height	2.95 m	9.68 ft
Wheel track	2.33 m	7.64 ft

Fuel consumption

Nominal values alt 0 m ISA as provided by engine manufacturer

max continuous PWR	61 l/h	16.1 US gal/h
Cruising 75% MC	46,5 l/h	12.3 US gal/h
Cruising 65% MC	36 l/h	9.5 US gal/h





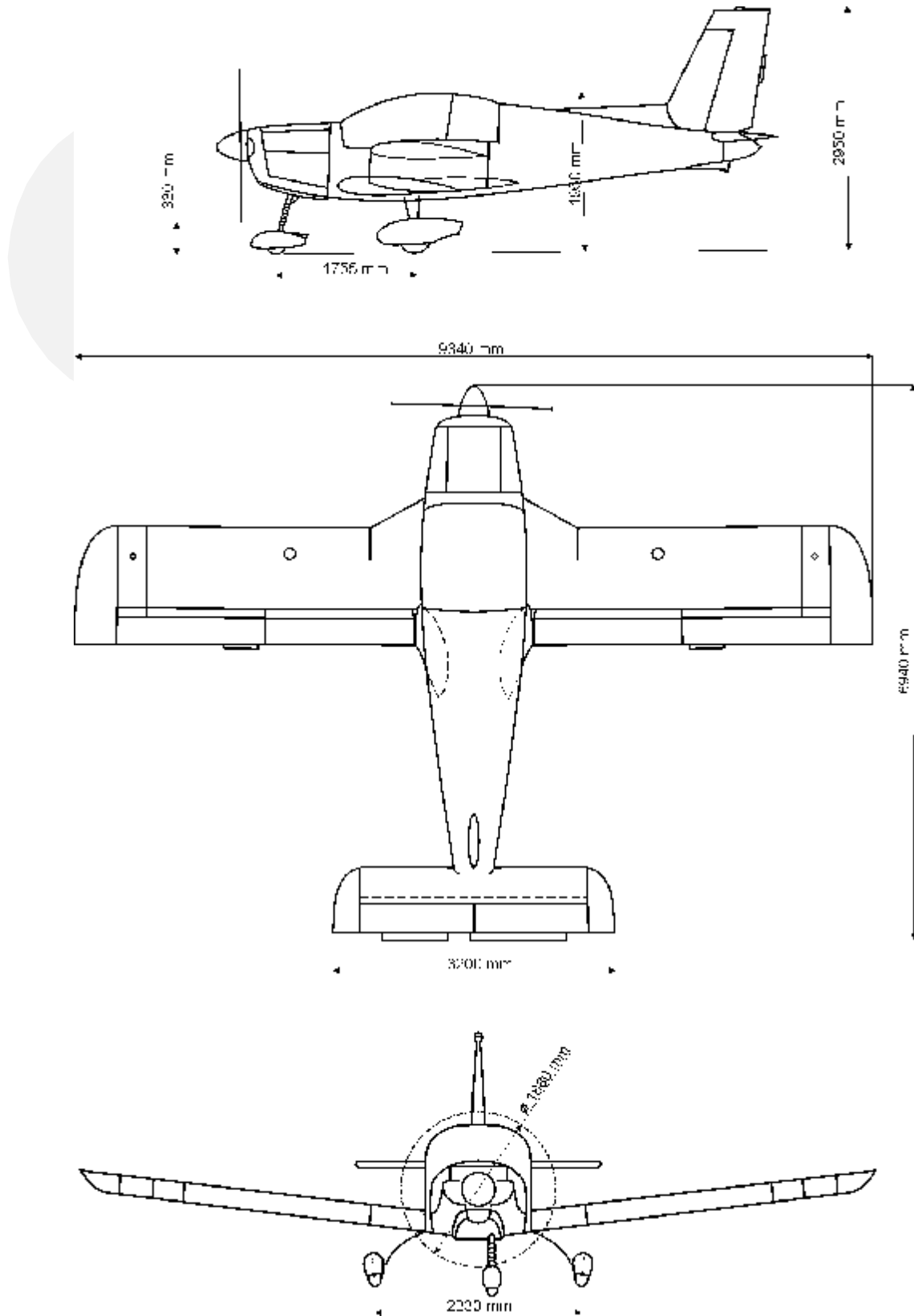
ZLIN Z 242 L

Performance & Specification

	NORMAL		AEROBATIC	
Airspeeds				
Maximum level speed	231 km/h	125 kt	236 km/h	127 kt
Cruising 75% MC	207 km/h	112 kt	209 km/h	113 kt
Cruising 65% MC	176 km/h	95 kt	185 km/h	100 kt
Stall Speed	93 km/h	50 kt	87 km/h	47 kt
Max climb speed	4.25 m/s	850 ft/min	5.5 m/s	1080 ft/min
Operational loading				
Loading limitations	+ 3.8 g / - 1.5 g		+ 6 g / - 3.5 g	
Take-off distances				
ALT 0 m ISA, max continuous PWR, dry concrete RWY, flaps "TAKE OFF"				
Take off run	266 m	873 ft	210 m	689 ft
Take off distance to 15 m (50 ft)	565 m	1854 ft	450 m	1476 ft
Landing distances				
Landing run	265 m	870 ft	245 m	805 ft
Landing distance from 15 m (50 ft)	540 m	1770 ft	500 m	1640 ft
Range				
(ALT 2000 m, 6560 ft)				
75% engine power	935 km	504 NM	424 km	229 NM
65% engine power	1056 km	570 NM	495 km	267 NM
Ceiling				
Service Ceiling	4500 m	14764 ft	4800 m	15748 ft
Weights				
Empty weight of aircraft increases with additional equipment.				
Empty weight +/- 2%	730 kg	1609 lbs	730 kg	1609 lbs
Maximum take off weight	1090 kg	2400 lbs	970 kg	2140 lbs
Crew: 2 pilots	200 kg	441 lbs	200 kg	441 lbs
Baggage: cabin compartment	20 kg	44 lbs	-	-
Fuel capacity				
Main fuel tanks	2 x 60 l	2 x 16 US gal	2 x 60 l	2 x 16 US gal
Auxiliary fuel tanks	2 x 55 l	2 x 14.5 US gal	-	-
Oil capacity				
Oil capacity (Engine)	8 l	7.5 US qts	6 l	5.7 US qts



ZLIN Z 242 L Performance & Specification





ZLIN Z 242 L

1. Standard Aircraft

Power Plant & Accessories

Lycoming AEIO-360-A1B6 Engine 200 HP @ 2700 RPM, certified for 100 LL fuel, fuel injection system
Mühlbauer MTV Propeller, 3 blades, constant speed
Propeller spinner, Electric starter
Dry air filter, Engine oil cooler
Dual ignition, Stainless steel exhaust silencer
Engine mounts with dampers

Electrical System

CONCORDE's RG battery 24 V/19 Ah
Emergency T & B indicator power supply
External auxiliary power supply
Fused avionics circuits
Alternator, Master switch
Rocker switches & circuit breakers

Fuel System (indicators in metrics)

2 x 60 litres (16.0 US Gal.) Main tanks (wing roots)
2 x 55 litres (14.5 US Gal.) Auxiliary tanks (wing tips)
Fuel drain cup
Fuel pump (engine driven), Fuel pump (electric)
Individual fuel tank drains

Engine Instruments

Quadruple fuel gauge
Oil temperature / pressure / Fuel pressure / Flow gauge (°C, kPa, l/h)
Systems Annunciator lights
Cylinder head temperature indicator and exhaust gas temperature gauge
Voltammeter
Engine RPM indicator
Manifold pressure indicator
Heated Pitot tube, static pressure & ram pressure probes

Flight Instruments

Air speed indicator (knots), Stall warning horn
Altimeter (ft.)
Vertical speed indicator (ft./min.)
Turn and Bank Coordinator, Aircraft clock
G-meter, Magnetic compass
AMU 1.01 Acceleration monitoring unit

Controls

Nose wheel /dual rudder control pedals
Dual toe activated brakes
Dual stick controls (tie rod operated)
Push/pull engine throttle control

Push/pull propeller speed control
Mixture control
Fuel selector (left/right/both)
3 position flap actuating lever
Rudder and elevator trim controls
Parking brake

Interior

2 place, side by side configuration
Adjustable Pilot and Copilot parachute compatible seats (fireproof)
Adjustable Pilot and Copilot pedals
Adjustable cabin ventilation, Cabin heater
Annunciator panel glare shield
Electrical & Avionic Circuit Breakers
Metal instrument panel with removable subpanels
Map & Storage pockets
Baggage compartment
Canopy lock

Exterior

Anodized aluminum skin
Welded steel tube central fuselage
Standard white paint scheme (polyurethane DuPont)
Fixed tricycle nose-type landing gear
Steerable Nose Wheel
Mitas tires
Hydraulic disk brake system
Oleo nose wheel strut with shimmy damper
Wheel Fairing
Wing & Fuselage quick release access panels
Heated Pitot system
Beacon light on rudder
Pitot tube cover and Static openings bladders

Fire Protection & Safety Features

Ejection canopy with dual quick release handles
Main spar pressure gauge
Five-point seat-belts (2 pcs)
Fireproof hoses in engine compartment
Firewall and Fire extinguisher
ELT E-01

Documentation (in English language)

Flight Manual
Engine, Propeller and Comm/Nav Operator's Manuals
Maintenance Manual Volume I.-II., Spare Parts Catalogue, Export Certificate of Airworthiness (if applicable)



ZLIN Z 242 L

2. Instrument Packages

Standard VFR Day Package (in accordance with EASA, ICAO and CAA CZ):

Included in the price of standard aircraft.

KY 96A	COMM
KT 76C	XPNDR
AK 350	Altitude Encoder
DavidClark	Headsets H 10-36 (2 pcs)

Examples:

- *KT 73 instead of KT 76C*
- *GTX 327 instead of KT 76C*
- *COMM/NAV KX 155A+KI 203+CI 158C instead of KY 96A*
- *COMM/NAV/GS KX 155A+KI 204+CI 158C+CI 507 instead of KY 96A*
- *add ADF KR 87+KI 227 indicator*
- *add AUDIO/MKR/VOX IC – GMA 340+CI 102*
- **and more changes available on the base of customer's requirements**

Optional IFR BASIC Package (according to EASA, ICAO and CAA CZ):

GMA 340	Audio-MKR-Voice IC (incl. CI 102)
KX 155A	COMM1-NAV1-GS1 (incl. CI 292-1, CI 158C, CI 507)
KI 204	Indicator
KY 96A	COMM2 (CI 122)
KR 87	ADF (incl. KA 44B)
KI 227	ADF Indicator
KT 76C	XPNDR (incl. KA 61)
KN 62A	DME (incl. KA 61)
AK 350	Altitude Encoder
SCOTT	Outside Air Thermometer
DavidClark	Headsets H 10-36 (2 pcs)
UI 5934D-3	2 nd Altimeter
AIM 205 -1BL	Directional Gyro (electric)
AIM 1200	1 st Attitude Gyro (electric)
AIM 1200	2 nd Attitude Gyro (electric)
Alternative Static Pressure Source	
Cabin and Instruments lighting	
Halogen taxiing and landing lights (left wing)	
Position and strobe lights	



Optional changes available on the base of customer's requirements

Examples:

- *GTX 327 instead of KT 76C*
- *COMM2/NAV2 KX 155A+KI 203 instead of COMM2 KY 96A*
- *COMM1/NAV1/GS1/GPS1 GNS 430+GI 106A instead of KX 155A+KI 204*
- *COMM2/NAV2/GS2/GPS2 GNS 430+GI 106A instead of KY 96A*
- *without DME KN 62A (not required for IFR in some countries)*
- *HSI (KCS 55A) instead of GI 106A+directional gyro*
- *and more*



ZLIN Z 242 L

3. Instruments on request

- | | | |
|------|-----------------------------------|----------------------------------|
| 3.1 | Vacuum gyroscopic system | |
| 3.2 | Attitude Gyro (electric) | AIM 1200 or LUN 1241.A8G8W |
| 3.3 | ELT | Pointer 3000-10AF or Artex ME406 |
| 3.4 | Engine Hour Recorder | HOBBS |
| 3.5 | Outside Air Thermometer | Scott |
| 3.6 | Alternate Static Pressure Source | |
| 3.7 | Directional Gyro (electric) | AIM 205-1BL |
| 3.8 | 2nd Airspeed Indicator | LUN 1106.J5B4 |
| 3.9 | 2nd Altimeter | UI 5934D-3 |
| 3.10 | 2nd Magnetic Compass | LUN 1224 |
| 3.11 | 2nd Turn Coordinator | S-TEC 6407-28L |
| 3.12 | 2nd Vertical Speed Indicator | LUN 1144.A3B1 |
| 3.13 | Fuel System indicators in gallons | |

4. Cockpit Accessories on request

- 4.1 Canopy Shade Curtains (recommended into hot weather conditions)
- 4.2 Blind Flying Curtains for IFR Training
- 4.3 Instrument Lighting
- 4.4 Cabin Lighting
- 4.5 2nd Intercom Pushbutton
- 4.6 Hot Mike Switch
- 4.7 Parachute ATL 88 (1 pc)
- 4.8 Protecting Seat Covers
- 4.9 Optional leather and colors of interior
- 4.10 Sliding Canopy Window– left, right, both (recommended into hot weather conditions)
- 4.11 Rear View Mirror
- 4.12 David Clark Headsets H 10-30 (2-plugs)
- 4.13 E-T-A Circuit Breakers on the "T" panel
- 4.14 Electric socket for external GPS on the instrument panel

5. Aircraft Accessories and Spare Parts on request

- | | | | |
|------|---|------|--|
| 5.1 | Optional graphic paint scheme (four-layer metallic system DuPont) | 5.12 | Engine Winter Coating |
| 5.2 | Hartzell Propeller (substitute for Mühlbauer MT propeller) | 5.13 | Anchoring Device and/or Chocks |
| 5.3 | Good Year tires (instead of Mitas tires) | 5.14 | Maintenance Jack Stands |
| 5.4 | Exhaust silencer made of INCONEL | 5.15 | Engine & propeller wrenches |
| 5.5 | Glider Towing Device with Internal or External Rear View Mirrors | 5.16 | Aircraft tow bar |
| 5.6 | Halogen taxiing and landing lights (left or both wings) | 5.17 | Brake Filling Device |
| 5.7 | Position and strobe lights | 5.18 | Parachute Support (2 pcs) |
| 5.8 | Placement of customer's registration signs (painted/printed) | 5.19 | Ferry Flight Fuel |
| 5.9 | 500 FH Recommended Spare Parts Set (with delivery of the airplane in a container these and more spares could be shipped with airplane lowering the price for their separate shipping) | 5.20 | Aircraft Packing Into Container (1 a/c in 40" container) |
| 5.10 | Winter Operation Equipment | 5.21 | Aircraft Packing Into Container (2 a/c in 40" container). With order of even number of aircraft (two and multiple of two) the price for shipping of one a/c will be lower since two aircraft will be delivered in one container. |
| 5.11 | Canopy and Engine covers | 5.22 | Pilot Type Rating and/or Engineer Type Rating Training |
| | | 5.23 | Airplane Assembly by Manufacturer at Place of Delivery |



ZLIN Z 242 L

6. General Purchase Conditions (depend on specific contract):

- 6 months usual delivery lead time since receiving downpayment. The delivery time is valid for first airplane in case of sale of more airplanes. Delivery terms EXW Otrokovice (Incoterms 2000).
- Price valid for 1-3 airplanes
- Payment conditions:
 - 30% downpayment from the total price when signing the contract
 - 20% downpayment from the total price within 45 days from signing the contract
 - 30% downpayment from the total price within 90 days from signing the contract
 - 20% before delivery
- Warranty 2 years or 1000 flight hours on main aircraft structures
- Financial plan available to qualifying customers
- Irrevocable Letter of Credit acceptable as well (add 2% to the total price)

Contact information:

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CZECH REPUBLIC

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