



FLARIS[®]
LARØ1

feel free





FLARIS LAR 01

– personal freedom for the 21st century

FLARIS LAR 1 is a single-engine jet with a light-weight composite structure.

It belongs to a new category of small, ultralight jets
which are ideal for those who need to travel for business or leisure.

FLARIS LAR 1 combines opposing characteristics: ease of flying, which is typical of
ultralight planes, with the performance of jets (speed and range).
We designed a machine which is so easy to fly that only a private pilot license is required.





FLARIS LAR 1 – dreams become reality

Today time is extremely valuable. FLARIS LAR 1 is saying no to long and exhaustive traveling. FLARIS LAR 1 is the answer to the transport challenges of our time. This is the alternative to crowded motorways and time-consuming flights on commercial airlines.

Closer to your destination

- easy detachable wings
- does not require a hangar – all you need is a spacious garage
- suitable for transport on trailers
- exceptionally short take-off and landing
 - requires a short (250 m, 820 ft) grass airstrip or a small airport
- ease of flying, suitable for one-man operation
- private pilot license

**FLARIS LAR 1 allows you to avoid large airports
and get closer to your destination**



Environmentally – friendly aerial revolution

FLARIS LAR 1 – innovative airframe design on a worldwide scale.

It is one ton lighter than VLJ-class planes and introduces a new category of ultralight jets.

This makes it friendly for the environment and minimizes travel expenses.

The plane's maximum efficiency and economy is the result of its characteristics including its low takeoff mass, modern propulsion and exceptional aerodynamics.

Ecology and cost efficiency

- state-of-the-art pre-impregnated carbon fibers
- exceptionally light empty weight of only **700kg (1543 lb)**
- low takeoff mass of **1500 kg (3300 lb)**
- state-of-the-art powerplant (**1 x Williams FJ33, (1460 lbf)**)
- exceptional lift-to-drag ratio **L/D=18**
- low fuel consumption

**This reduces emission of exhaust gas
and guarantees low fuel consumption.**



Safe means of transport

Owing to its unique lift-to-drag ratio, which is equivalent to that of a glider, FLARIS LAR 1 can glide a distance of 18 km without propulsion for every 1 km of height loss. The plane is also equipped with a modern parachute safety system located in the nose area.

Quest for safety

- parachute safety system
- lift-to-drag ratio $L/D=18$, combined with low takeoff mass enables landing in unconventional area
- monocoque drop-shaped fuselage
- large speed span – cruise speed of **700km/h (380 knots)** and stall speed of **115km/h (62 knots)**
- advanced Garmin G600 radio and navigation system, which serves as the copilot
- minimum number of devices that focus the pilot's attention
- spin-proof properties

It is easy to fly and perfectly safe.

It is a modern mean of personal transport.



**FLARIS LAR 1 is a new kind of aircraft
for amateur and experienced pilots which:**

- ease of flying typical for ultralight planes
- a cockpit with a car-like feeling (comfort)
for 5 passengers with doors on both sides of the fuselage
- excellent lift-to-drag ratio ($L/D = 18$)
- takeoff mass: 1500 kg, (3300 lb)
- takes off and lands on grass airstrips
- approximate price of USD 1.5 million

There is no other plane like this one.



**PARACHUTES IN THE
NOSE AREA**

CAR-LIKE CABIN

**TOTAL WING
AREA 10 m², (108 ft²)**

.....
LENGTH 8,32 M, (27'3" ft)
.....

**STRUCTURE MADE FROM
PRE-IMPREGNATED
CARBON FIBERS**

.....
HEIGHT 2,43 M, (8' ft)
.....

**EASILY
-DETACHABLE
WINGS**

**JET ENGINE
STATIC THRUST 6,5 kN
(1460 lbf)**

.....
TOTAL WINGSPAN 8,68 M, (28'6" ft)
.....

GENERAL CHARACTERISTICS

Manufacturer	Metal-Master
Type	ULJ
Number of seats	5 (1 pilot + 4 passengers)

POWERPLANT

Type	1 x Williams FJ33
Static thrust	6,5 kN (1460 lbf)
Avionics	System G600

MASS

Empty weight	700 kg (1543 lb)
Takeoff mass	1500 kg (3300 lb)

PERFORMANCE

Cruise speed	700 km/h (380 knots)
Stall speed	115 km/h (62 knots)
Service ceiling	14000 m (46.000 ft)
Range	2500 km (1350 NM)
Take-off run	250 m (820 ft)
Lift-to-drag ratio	L/D=18



FLORIS



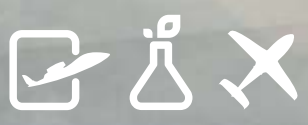
Advanced design

- FLARIS LAR 1 It has uniquely-shaped semi-elliptical wings with profiles optimized for high speed and lift-to-drag ratio and benign stall.
- The plane fuselage geometric design provides a low drag coefficient with comfort.
- The design of the cabin with doors on both sides enables passengers to be seated without having to use external steps and provide ease of movement in the cabin of the aircraft.
- The method of connecting wings to the fuselage is unusual for jets and enables quick assembly of the plane and storage ease.
- A multi-bolt cabin door locking system (11 bolts) guarantees a firm air-tightness fit at minimum door mass.
- An innovative cabin structure design reinforced by the airframe.
- Original structure of the central part of the fuselage, supported by two integral duraluminium forms, which function as the fuel tank.
- These innovative designs are patented by Metal-Master.



FLARIS

LAR01



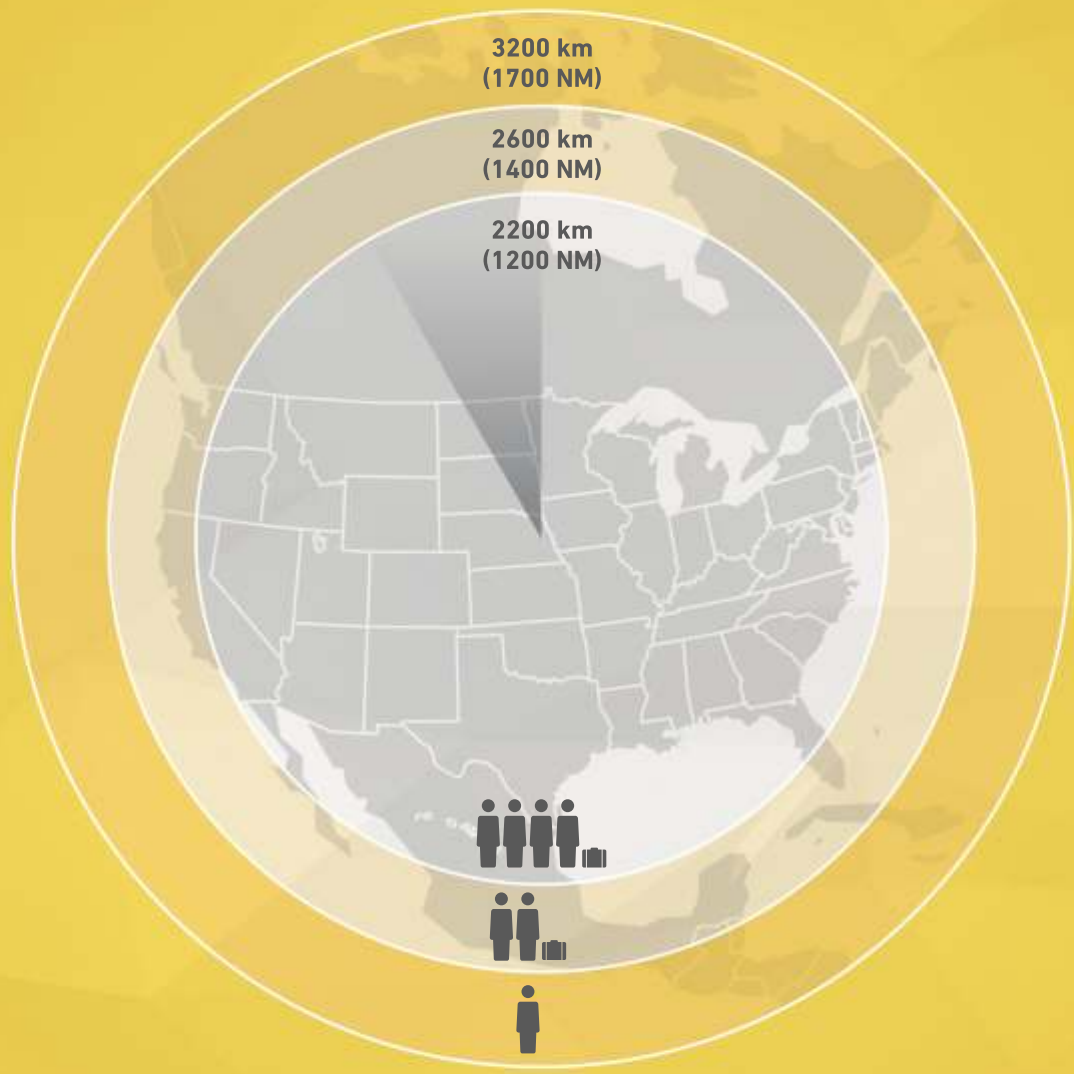




3200 km
(1700 NM)

2600 km
(1400 NM)

2200 km
(1200 NM)



FLARIS.COM

feel free



**METAL
MASTER**

ul. Nowa 4
58-562 Podgórzyn
POLAND

T: +48 757 000 012

T: +48 757 550 601

F: +48 757 550 602

E: info@flaris.pl



Narodowe Centrum Badań i Rozwoju