

**ARC**  
AERO SYSTEMS

**LINX P9**



# The world's most advanced 11-Seater, 9-Passenger aircraft with VTOL capability

Communities thrive via connectivity. Hard infrastructure requirements and significant operating costs are the key limiting factors to accessibility and connectivity. Today more than ever end-users value safety, affordability, reliability and flexibility. In response to these requirements, ARC has designed the Linx P9 Passenger aircraft.

- ARC Linx P9 is an affordable, sustainable solution for sub-regional aircraft operators or airlines, who want the versatility of a helicopter combined with the range of a fixed-wing aircraft.
- ARC Linx P9 is a VTOL solution for AAM and especially RAM ( Regional Air Mobility), with capabilities that enable the creation of new routes, connecting the remotest locations to the busiest cities.
- This compound aircraft can take off and land from a space as small as a helipad, yet able to operate with minimal infrastructure at either end of each journey.
- A hybrid propulsion system future-proofs the airframe, enabling operators to take advantage of advanced fuels such as SAF and hydrogen as they become available.
- The simplicity of the aircraft's mechanical flight control system, the use of proven avionics and the adoption of existing aircraft systems such as the landing gear, ensures inherent reliability, high operational availability and low operating costs.





With history of developing various sizes of passenger aircraft, ARC's team has shown a comprehensive, proven track record in delivering world leading products.

At ARC we recognise that safety is a given, certification is a must, yet the real challenge is to produce an aircraft that will enrich the passenger experience, whilst providing financial reward for the operators.

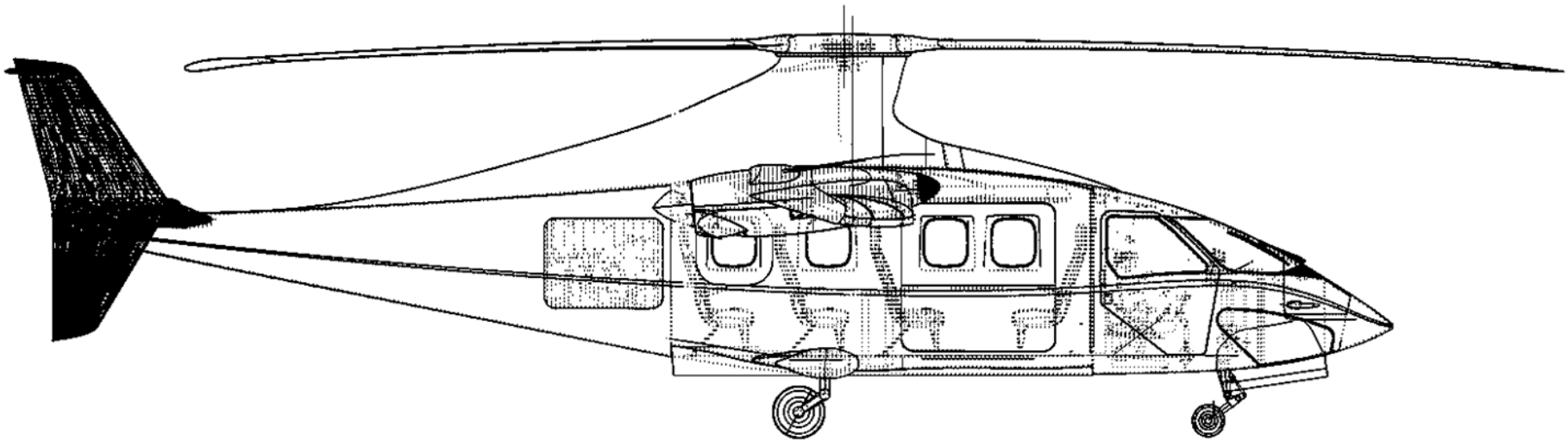
Seyed Mohseni, MBA, PhD, CEO





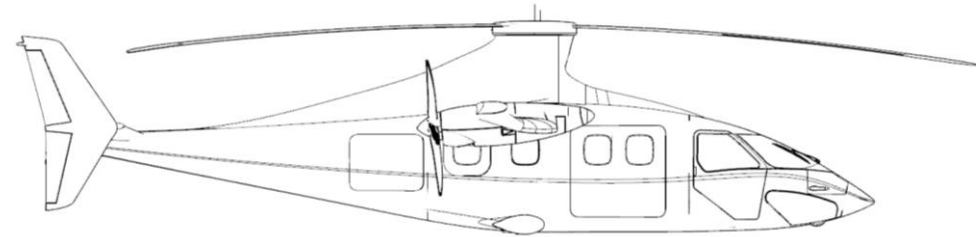
## Made Simple, Efficient with Style

With its unique design, the P-9 embodies a lightweight, full-composite structure. Its twin engines provide security, whilst a high wing and rear-mounted propellers provide an unobstructed view. A retractable tricycle landing gear reduces aerodynamic drag and hence fuel consumption during high-speed cruise.



The 2 pilot/9 passenger seat Linx aircraft offers airline levels of comfort. Passengers will appreciate the unpressurized cabin, notably with more room than its competitors. A large sliding door provides dignified passenger embarking/disembarking and fast cargo loading. A central aisle provides individual seat privacy. The unpowered rotary-wing behaves as a natural parachute, with autorotation being the normal landing mode, not an emergency manoeuvre required by traditional helicopters should their engines fail.

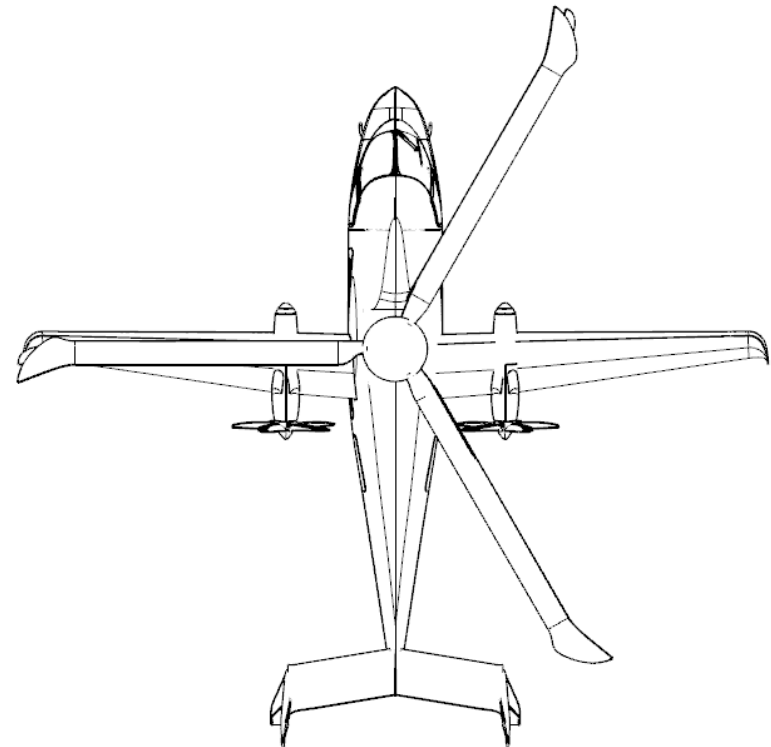
## Exterior Dimensions



Wing Span	12.6 m	41.3 ft
Rotor Diameter	13 m	42.6 ft
Length	11.6 m	38.1 ft
Height	3.5 m	11.3 ft

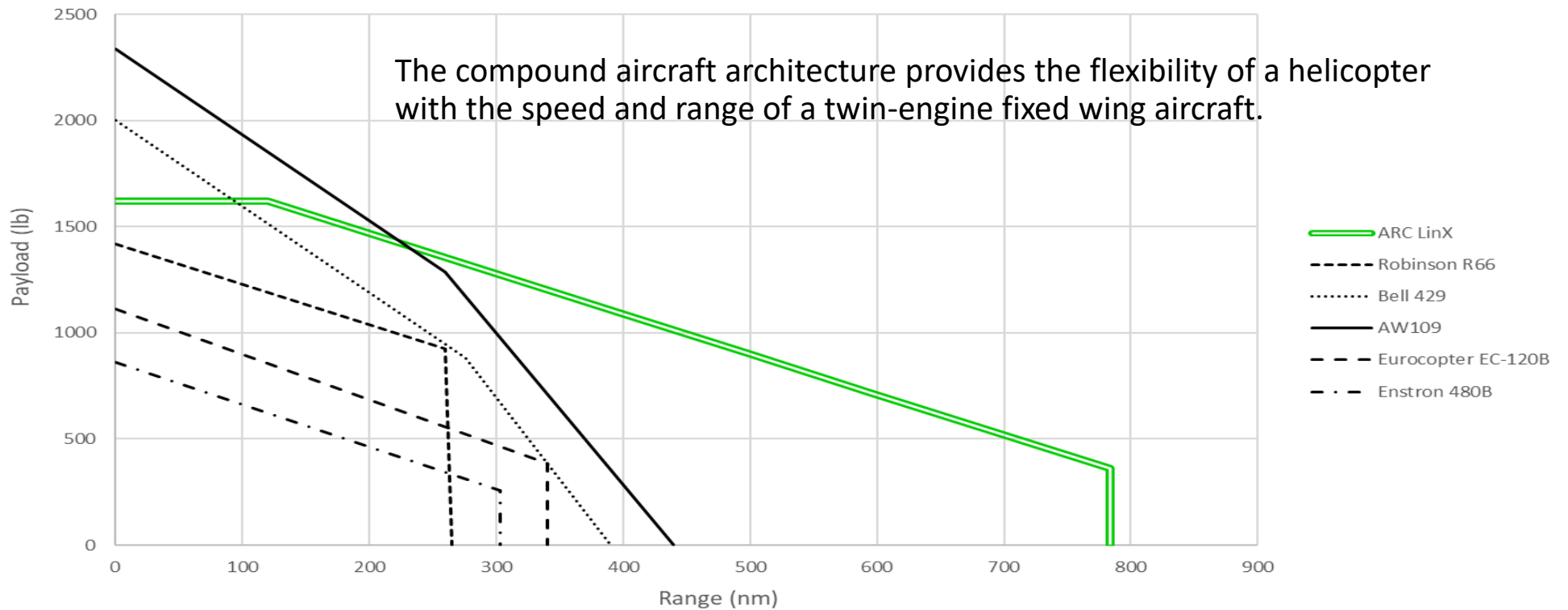
## Cabin Dimensions

Width	1.5 m	5.1 ft
Length	3.5 m	11.5 ft
Volume	7.6 m <sup>3</sup>	268 ft <sup>3</sup>



## Comparison vs Rotary wing

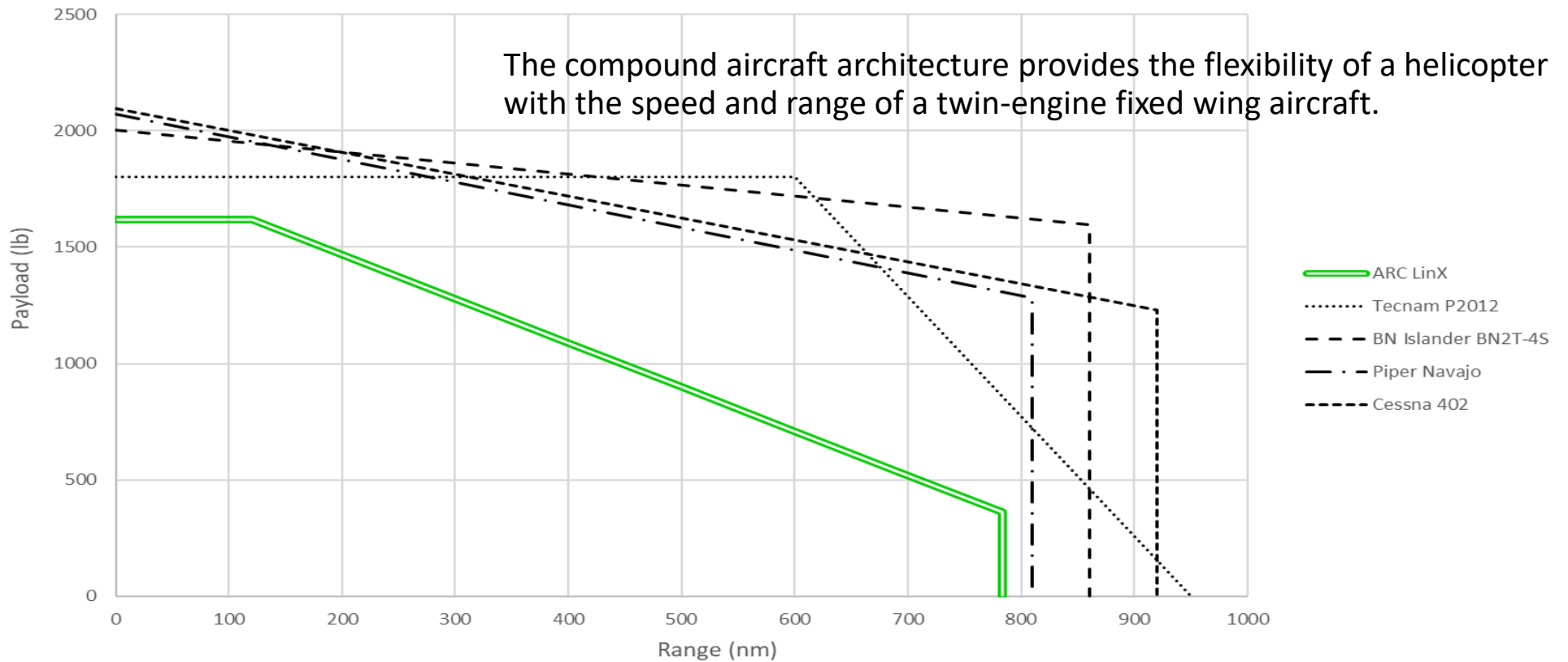
ARC LinX Payload Range Data vs Rotary Wing



## Comparison vs Fixed wing

ARC LinX Payload Range Data Fixed Wing Comparison

The compound aircraft architecture provides the flexibility of a helicopter with the speed and range of a twin-engine fixed wing aircraft.





## The Solution

### ▪ VERSATILE TAKE-OFF & LANDING

- Via jump take-off & no-roll landing
- VTOL redefined

### ▪ ACCESSIBLE

- No space, no problem!

### ▪ EFFICIENT ROTOR DESIGN

- Low disk loading
- Silent

### ▪ SAFETY BY SIMPLICITY

- Simple mechanical design
  - No gearbox (unpowered rotor)
  - Autorotation flight mode
  - No tail rotor
- Certified by FAA
- Lower operating/maintenance costs



Affordable



Energy-efficient



Accessible





**Spin-up.** The large diameter rotor is spun up to a high speed (with the blades at zero incidence) using a high torque electric motor.

**Take-off** is initiated as the pilot pulls the collective pitch lever, increasing blade pitch – he simultaneously pushes engine throttles to full power. The rotor lifts the aircraft upward while the engines accelerate the aircraft forwards to achieve sustainable horizontal flight.

**Cruise flight** is when about 90% of the aircraft's weight is supported by the wing. This reduction in blade load allows the rotor to be slowed, reducing drag significantly. As the wing is not used to provide lift at low speed, it can be made smaller than that of a fixed wing aircraft of similar size, reducing aerodynamic drag and weight.

**Landing** is achieved by throttling back the engines and entering the autorotation mode. The Linx approaches on a typical 5–10-degree flight path, keeping rotor energy high. As the aircraft nears the ground, the Linx will flare, decelerating and descending vertically to a zero-roll landing.



## Performance

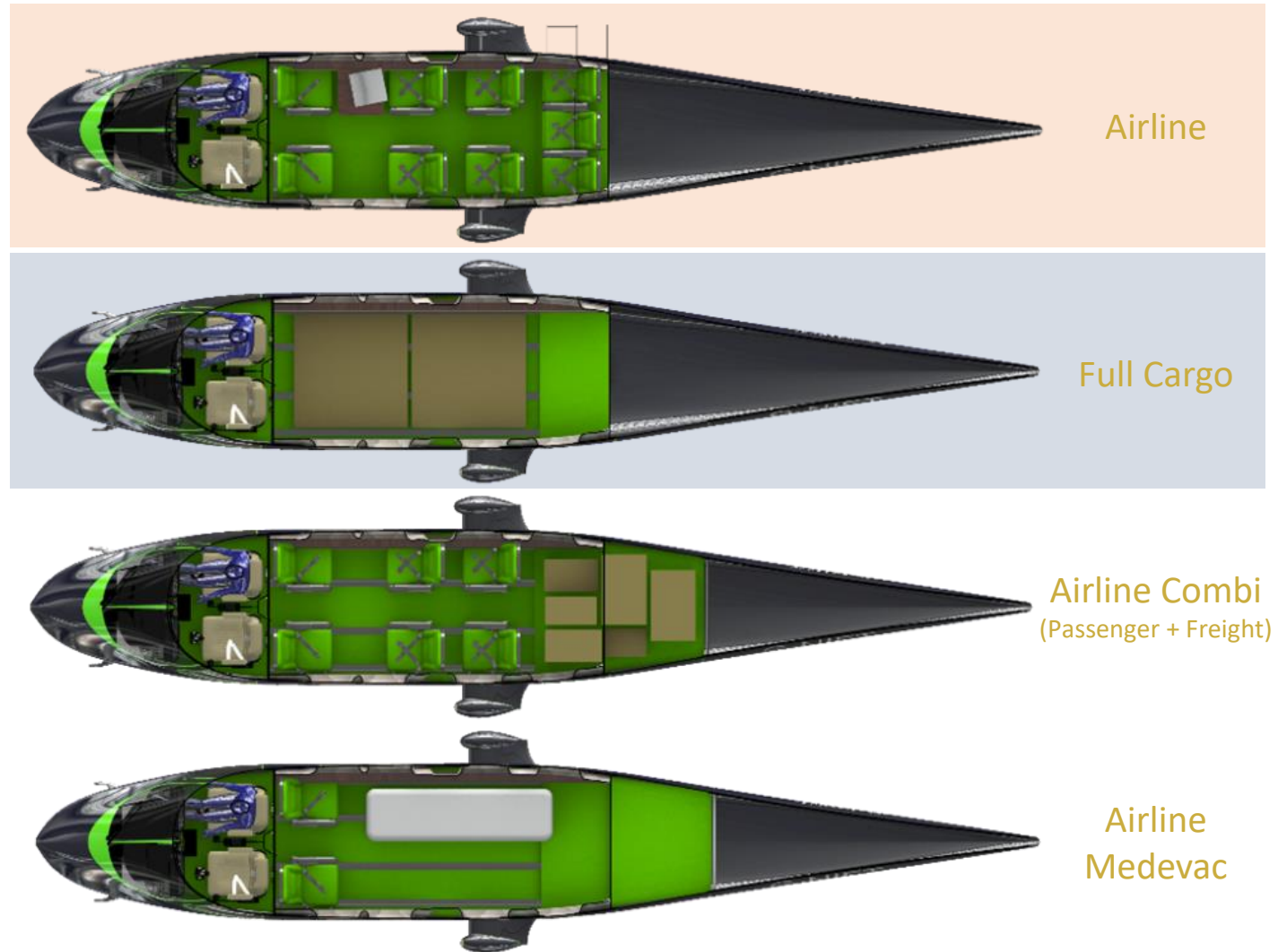
Min Speed	70 km/h	37.8 kts
Max Cruise Speed	370 km/h	200 kts
Cruise Speed (@75%, 7,000 ft)	300 km/h	162 kts
Max RoC	7.6 m/s	1500 fpm
Max Operating Altitude	3,050 m	10,000 ft
Max Range	1400 km	780 nm
Operative Range (1 Pilot + 6 Pax)	860 km	464 nm
Take-Off Capability	Jump Take-Off	
Landing Capability	No Roll Landing	



## Multimission

The Linx is offered in two baseline versions (Airline & Full Cargo) and two variants (Combi & Medevac)

The Linx multi mission flexibility not only enhances the operations but also increases the aircraft residual value in time.

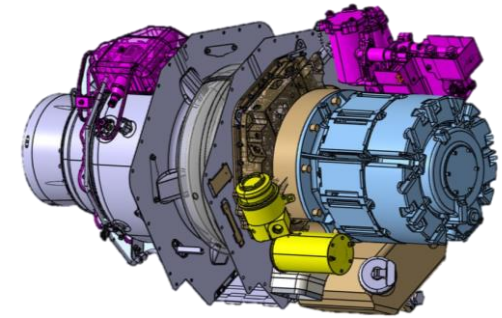




## Specifications

### Propulsion

Power Source	Turboelectric/Hydrogen fuel cell	
Motor Power	2 * 370 kW	2 * 496 hp
Propeller	5-blade 2m diameter	



(Courtesy of SAFRAN)

### Weight

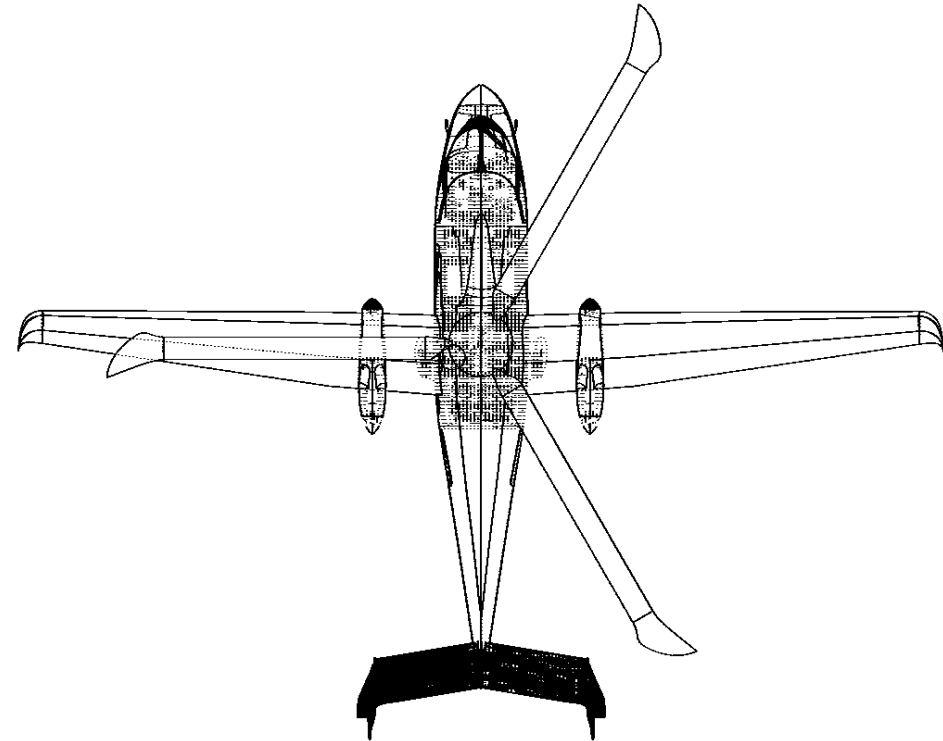
Max Gross Weight	3,175 kg	7,000 lb.
Standard Empty Weight	1,930 kg	4,255 lb.
Useful Load	1,245 kg	2,745 lb.
Fuel Capacity	750 lit	198 US Gal



(Courtesy of SAFRAN)

## Operating Cost\*

Fuel Consumption	\$ 160 / flt hr.
Crew	\$ 130 / flt hr.
Engine & Rotor Maintenance	\$ 115 / flt hr.
Airframe Maintenance	\$ 100 / flt hr.
Total	\$ 505 / flt hr.



- estimated operating cost (2023)

# STUDIES SHOW THAT THE BENEFITS OF ARC Linx P9 FOR OPERATORS INCLUDE

40% more cost-effective compared to helicopters (based on the DARPA model)

30% increased range compared to similar size helicopters (based on the Roskam method)

Safer and more stable due to less complexity

Provides operational flexibility for take-off and landing compared to fixed-wing aircraft due to less infrastructure requirements.





## Certification:

As a single, unpowered rotor aircraft, the Linx does not come under the still evolving e-VTOL regulations

Certification will be based on the mature Part 23 regulations and will draw upon Part 27 (rotorcraft) for special conditions (as was our earlier aircraft; the Pegasus).

The P-9 Linx has a fully mechanical FCS, providing simple, reliable integrity, avoiding the highly complex, triple redundant, digital flight control systems of multi-rotor eVTOL aircraft.

This proven certification path reduces risk and development cost, enabling a significantly faster route to certification.

The P-9 has been configured for 2 pilots in accordance with FAA requirements for twin pilot operations as part of the pilot training syllabus

# LINX P9

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## Five reasons to own a Linx

### DEPLOYABLE

The industry's most advanced technology which enables the jump take-off and no-roll landing capability.

### RESILIENT

Meets every need, delivering extreme versatility with maximum safety.

### EFFECTIVE

Multimission capability granted by two versions and two interchangeable variants.

### AFFORDABLE

Cost-efficient design for long lifetime at high cycles of operation.

### MULTI FUEL/ POWERPLANT

Fuel agnostic powerplant (SAF, Jet-A, H2, Diesel) Certified to CAA (EASA) Part 23 regs with part 27 "special conditions"







## ABOUT US

ARC Aerosystems is a UK based technology company developing a range of electric and hybrid vertical take of and landing (VTOL) aircraft. The company's aim is to enable sustainable civil air transport technology to serve humanity and the environment.

ARC Aerosystems has a group of experts in the fields of aerodynamics, aircraft design, propulsion systems and certification, working together to develop a range of products that will redefine the air travelling experience whilst financially rewarding operators.



# ARC

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