

# Fuel Cell Drone

## Technology Overview

The drone market is expected to grow to USD 58.4 billion by 2026. With the advancement in technology, drones are finding more industrial uses ranging from surveillance to delivery services. However, commercial applications of drones are currently hindered by the short flight duration (of around 15-30 minutes) due to lithium battery power source constraint. This flight time limitation can result in productivity loss and severely restricts the great potential of drone technology

On the other hand, hydrogen fuel cell systems are known to store much more energy as compared to lithium batteries. This allows fuel cell powered drones to be able to perform inspections of up to 2-4 hours, which greatly increases its field of use.



## Technical Specification

### Drone

MTOW	24.9	kg
Payload	3	kg
Configuration	Hexacopter	
Flight time	90	mins

### Fuel Cell Power System

Weight	12	kg
Fuel Cell Rated Power	2.6	kW
Hydrogen Tank	9	L
Lipo Battery	2x6000	mAh

## Potential Application

- Inspection
- Search and rescue
- Land surveying
- Border patrol
- Delivery

## Benefits at a glance



Light and Compact



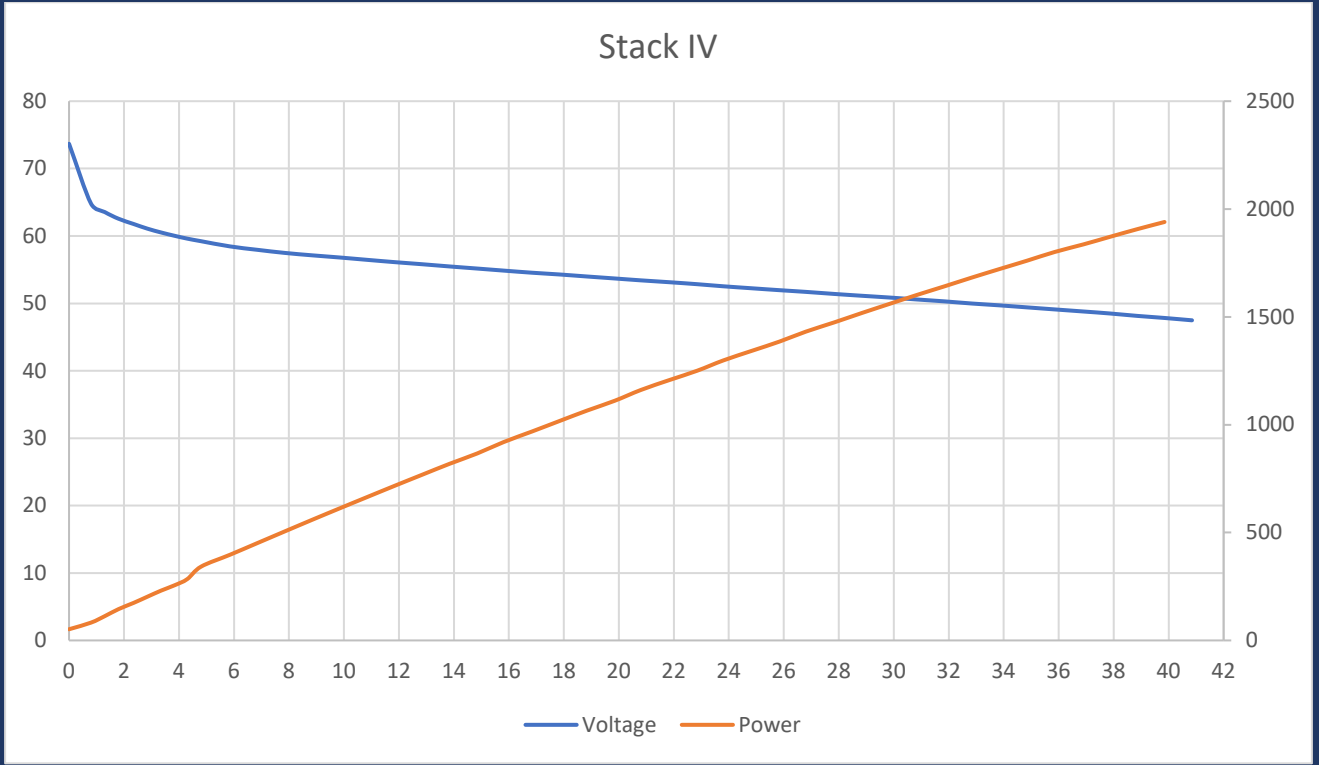
High Power Density



High Endurance

# Technical Specification (Fuel Cell per module)

Power Specification	Rated Power	1600W
	Rated Current	30A @ 50V
	Hydrogen Pressure	2 barg
Fuel Requirement	Peak consumption	~22L/min
	Hydrogen Purity	Min 99.99%
Physical Specification	Cell Number	80 Cell
	Dimension (L x W x H)	~230mm x 135mm x 150mm
	Weight (excluding control circuit)	~2.5kg
Accessories	<ul style="list-style-type: none"><li>• Cooling Fans</li><li>• Purge Valves</li><li>• XT 90 Power Connection</li><li>• OD 6mm PU Tubing Connector (inlet and outlet)</li><li>• Fan Holder</li></ul>	



Beginning of life test. Test condition: Ambient 22.5°C, RH 70%

## Used Case



We have successfully flown the drone for a continuous 1.5hrs (without payload) in Feb 2023

### Benefits

Up to 2hrs of continuous flight time.

Refilling will only take up 5-10mins for the full 100% range regardless of the tank size.

### Typical specification of the drone

MTOW: 24.9kg

Power System: 2400W

Payload: up to 3kg