



INSPIRED FLIGHT



IF1000 Hexacopter

Specification Sheet

INSPIRED FLIGHT TECHNOLOGIES, Inc.



AIRCRAFT PERFORMANCE

Diagonal Size (propeller center to center)	950 mm (37.4 inches)
Dimensions (unfolded w/ propellers) (WxLxH)	1375 x 1250 x 515 mm (54.1 x 49.2 x 20.3 inches)
Dimensions (folded) (WxLxH)	625 x 505 x 420 mm (24.6 x 19.9 x 16.5 inches)
Aircraft Weight w/ 4x - IF99Wh Batteries	6.6 kg (14.5 lbs)
Aircraft Weight w/ 4x - 155Wh Batteries	7.5 kg (16.5 lbs)
Max Recommended Takeoff Weight	9.9 kg (21.8 lbs)
Max Payload Weight	3.3 kg (7.3 lbs)
Max Angular Velocity	Tilt: 300°/s, Yaw: 120°/s
Max Tilt Angle	35°
Wind Resistance	10 m/s (19.4 knots) continuous, 12 m/s (23.3 knots) gusts
Max Ascent Speed	5 m/s (16 ft/s)
Max Descent Speed	3 m/s (10 ft/s)
Max Ground Speed	18 m/s (40 mph)
Operating Temperature Range	-10°C ~ 45°C (14°F ~ 113°F)
Storage Temperature Range	-10°C ~ 40°C (14°F ~ 104°F)
Max Flight Time	See Figure 2 (page 6)
Max Altitude	See Figure 3 (page 6)

FLIGHT HARDWARE

Flight Controller	Flight Controller	Modal AI Flight Core
	Operating Software	PX4 (Modified Hexarotor 6001)
	Barometer Accuracy	+/-1.5 mbar
Global Positioning	GPS	mRo Ublox Neo-M8N GPS
	Positioning Accuracy	2.5 m Horizontal
Ground Sensor	Optical Distance Measurement Sensor	Garmin LIDAR-Lite v3
	Range	5 cm to 40 m, 1 cm resolution
	Laser	905 nm CLASS 1, EN/EIC 60825-1 2014



Power Distribution Board	Power Distribution	2x - IF PDB4
	Total Motor Outputs	8x - 30A Continuous
	Auxiliary Power Rails	5v @ 5A, 12v @ 5A, battery voltage @ 60A
Propulsion	Motor	6x - IF Bernoulli 3
	Propeller	17" x 5.8" (432 x 147 mm)
	Max Thrust per Motor	3.4 kg (7.5 lbs) @ 24v
Default Navigation Light Color Pattern > if preference not specified > Optional Colors: Red, Green, Blue, Cyan, Magenta, Yellow, White		Front Left & Middle Left: Red-ON Front Right & Middle Right: Green-ON Rear Left & Rear Right: White-ON

REMOTE CONTROL

Remote Control Radio	Jeti DS-12 Transmitter (NDAA Compliant)
Remote Control Software	Jeti Proprietary, 3rd Party Extensions Available
Radio Battery	Lithium Ion, 1S2P, 6200 mAh
Transmission Power	100 mW
Operating Frequency	2.4 GHz
Aircraft Receiver (RX)	Duplex R3L EX
Signal Range (line of sight)	2 KM
Operating Temperature Range	-10-85°C (14-185°F)

OR

Remote Control Radio	Horus X10S Transmitter
Remote Control Software	OpenTX
Radio Battery	2x 18650 LiPo Cells
Transmission Power	100 mW
Operating Frequency	2.4 GHz
Aircraft Receiver (RX)	R9 Slim
Signal Range (line of sight)	10 KM
Operating Temperature Range	-10-60°C (14-140°F)



TELEMETRY & GROUND STATION

Compatible Ground Station Software	QGroundControl V3.X (Linux, Windows, Android)
Telemetry Radio to Ground Station Interface	USB-A 2.0
Telemetry Radio	Microhard pMDDL2450
Telemetry Data Rate	25 Mbps
Encryption	AES Hardware Accelerated Encryption
Transmission Power	Up to 1 W (+30 dBm)
Operating Frequency	2.4 GHz
Signal Range (line of sight)	Up to 10 km (6.2 miles)
Operating Temperature Range	-40~85°C (40-185°F)
Telemetry Software Standard	Mavlink, AT Modem Command

STANDARD 99Wh BATTERY

Max Energy at Nominal Voltage		99.9 Wh
Nominal Voltage		22.2 V
Nominal Capacity		4,500 mAh
Classification		Lithium Polymer 6S1P
Net Weight		645 g (22.8 oz)
Charging	Max Current	9.0 Amps (2C)
	Max Voltage	25.2 Volts
Discharge	Max Continuous Current	157.5 Amps (35C)
	Max Burst Current	315.0 Amps (70C)
	Minimum Voltage Cut-off	18.0 Volts (20.0v recommended)
Self - Discharge		<5% per month
Operating Temperature Range	Charge	0°C ~ 45°C (32°F ~ 113°F)
	Discharge	-20°C ~ 60°C (-4°F ~ 140°F)
	Storage	-20°C ~ 40°C (-4°F ~ 104°F)
IF1000 Battery Configurations	4 Battery - Max Payload Available	3.3 kg (7.3 lbs)
	6 Battery - Max Payload Available	2.0 kg (4.4 lbs)



Standard Battery Charger

Charger	Venom Pro Quad Battery Balance Charger	
Input Voltage	100v - 240v AC / 11.0v - 18.0v DC	
Output Charge Capacity	100W x4	
Lithium Battery Compatibility	Up to 4.2v/cell, 6s 25.2v max	
Typical Charge Time (0 to 100%)	99Wh Battery	~75 Minutes
	155Wh Battery	~110 Minutes

OPTIONAL 155Wh BATTERY

Max Energy at Nominal Voltage	155.4 Wh	
Nominal Voltage	22.2 V	
Nominal Capacity	7,000 mAh	
Classification	Lithium Polymer 6S1P	
Net Weight	870 g (30.7 oz)	
Charging	Max Current	7.0 Amps (1C)
	Max Voltage	25.2 Volts
Discharge	Max Continuous Current	175 Amps (25C)
	Max Burst Current	350 Amps (50C)
	Voltage Cut-off	18.0 Volts (20.0v recommended)
IF1000 Battery Configurations	4 Battery - Max Payload Available	2.4 kg (5.3 lbs)
	6 Battery - Max Payload Available	0.7 kg (1.5 lbs)

Optional Parachute Safety System

Model Number	2x - IF Harrier 55-66
Parachute Diameter	1.68 m (66 inches) (each)
Total Weight (including rigging & controller)	700 g (25 oz)
Triggered by	Pixhawk, SATS-Mini, and/or Manual Trigger
Trigger Mechanism	Coil Spring Loaded Servo Trigger
Deployment Velocity	~6 m/s (~20 ft/s)



Typical Fall Distance until Parachute Fully Unfurled	-15 m (-50 ft)
Decent Velocity @ 9.9 kg	3.9 m/s (12.8 ft/s)
Certified Parachute Repacking Available	YES - Contact INSPIRED FLIGHT for more info

FLIGHT TIMES @ GIVEN PAYLOAD (WITH 10% RESERVE)

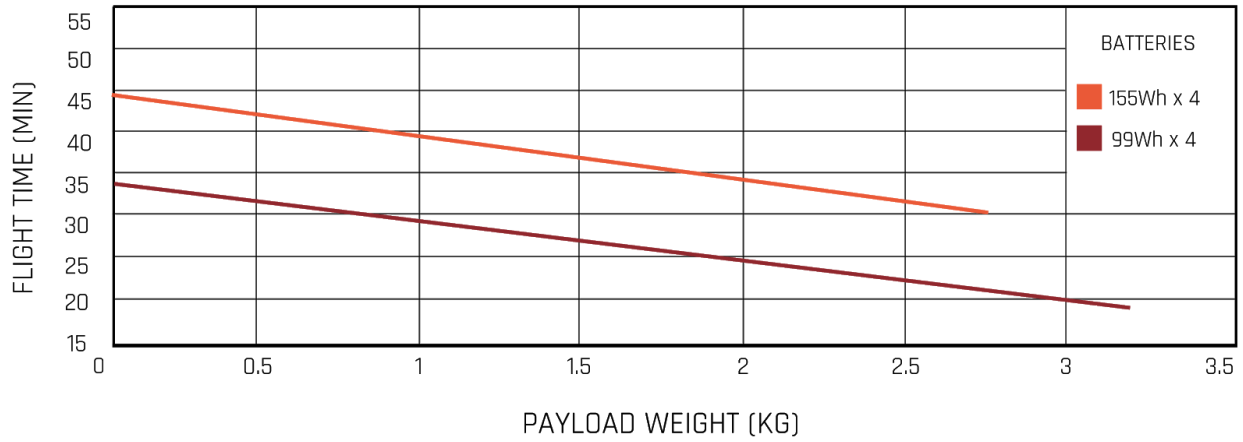


FIGURE 2

IF1000 MAX ALTITUDE @ GIVEN TAKEOFF WEIGHT

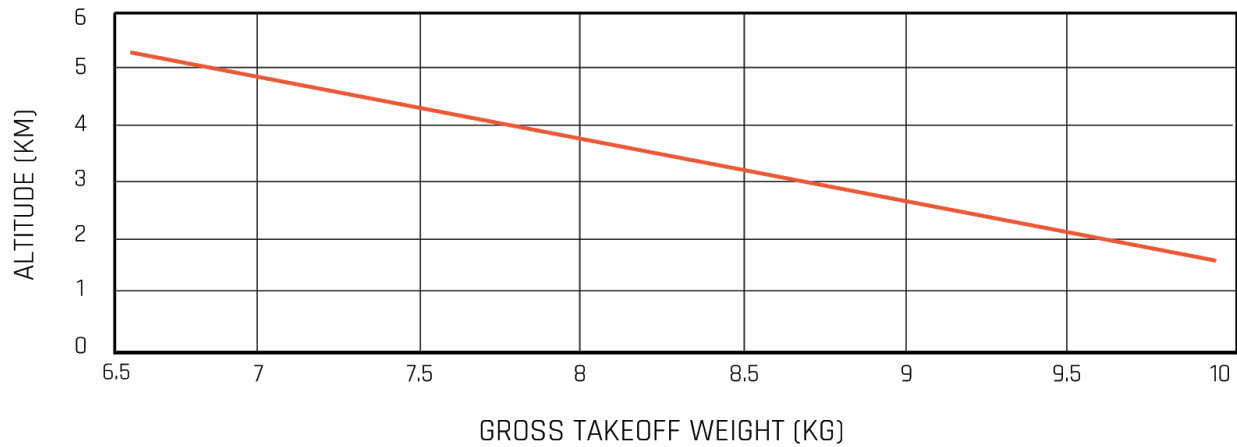


FIGURE 3



Figure 4: Vehicle in Flying Configuration without props



Figure 5: Vehicle in Stow Configuration