



INSPIRED FLIGHT



# IF750 Quadcopter

Specification Sheet

**INSPIRED FLIGHT TECHNOLOGIES, Inc.**



## AIRCRAFT PERFORMANCE

Diagonal Size (propeller center to center)	750 mm (29.5 inches)
Dimensions (unfolded w/ propellers) (WxLxH)	965 x 965 x 415 mm (38.0 x 38.0 x 16.3 inches)
Dimensions (folded) (WxLxH)	405 x 375 x 320 mm (15.8 x 14.6 x 12.6 inches)
Aircraft Weight w/ 2x - IF99Wh Batteries	4.2 kg (9.3 lbs)
Aircraft Weight w/ 2x - 155Wh Batteries	4.6 kg (10.1 lbs)
Max Recommended Takeoff Weight	6.2 kg (13.7 lbs)
Max Payload Weight	2.0 kg (4.4 lbs)
Max Angular Velocity	Tilt: 300°/s, Yaw: 150°/s
Max Tilt Angle	35°
Wind Resistance	10 m/s (19.44 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 ~ 50°C (14°F ~ 122°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 Quadrotor 4001)
	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	IF PDB4
	Total Motor Outputs	4x - 30A Continuous
	Auxiliary Power Rails	5v @ 5A, 12v @ 5A, battery voltage @ 60A
Propulsion	Motor	4x - 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: Red-ON Front Right: Green-ON Rear Left & Right: White-ON

## REMOTE CONTROL

Remote Control Radio	Jeti DS-12 Transmitter (NDA 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
Telemetry Radio	RFD 900x-US (Air/Ground Pair)
Telemetry Radio Certifications	FCC Compliant: CFR15.247, FCC ID: 2ADLE-900X
Telemetry Data Rate	250 kbit/s
Encryption	AES Hardware Accelerated Encryption
Transmission Power	Up to 1 W (+30 dBm)
Operating Frequency	902 - 928 MHz
Signal Range (line of sight)	Up to 40 km (25 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)
IF750 Battery Configuration	2 Battery - Max Payload Available	2.0 kg (4.4 lbs)



## Standard Battery Charger

Charger	Venom Pro Duo Battery Balance charger	
Input Voltage	100v - 240v AC / 11.0v - 18.0v DC	
Output Charge Capacity	80W x2	
Lithium Battery Compatibility	Up to 4.2v/cell, 6s 25.2v max	
Typical Charge Time (0 to 100%)	99Wh Battery	~90 Minutes
	155Wh Battery	~130 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)
Battery Configurations	2 Battery - Max Payload Available	1.6 kg (3.5 lbs)

## Optional Parachute Safety System

Model Number	IF Harrier 55-66
Parachute Diameter	1.68 m (66 inches)
Total Weight (including rigging & controller)	350 g (24.6 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 @ 6.2 kg	4.6 m/s (15.1 ft/s)
Certified Parachute Repacking Available	YES - Contact INSPIRED FLIGHT for more info

### FLIGHT TIMES @ GIVEN PAYLOAD (WITH 10% RESERVE)

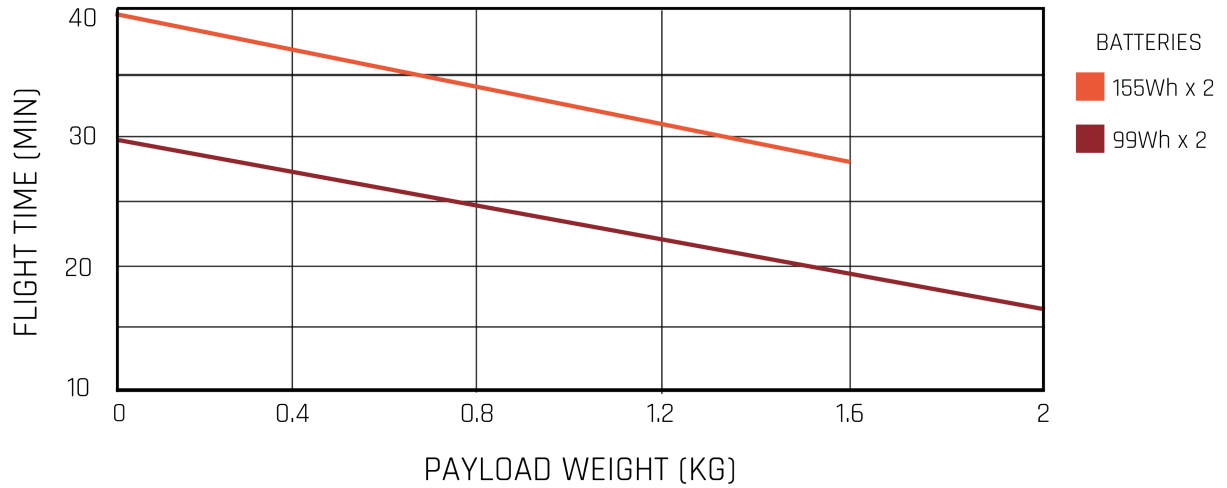


FIGURE 2

### IF750 MAX ALTITUDE @ GIVEN TAKEOFF WEIGHT

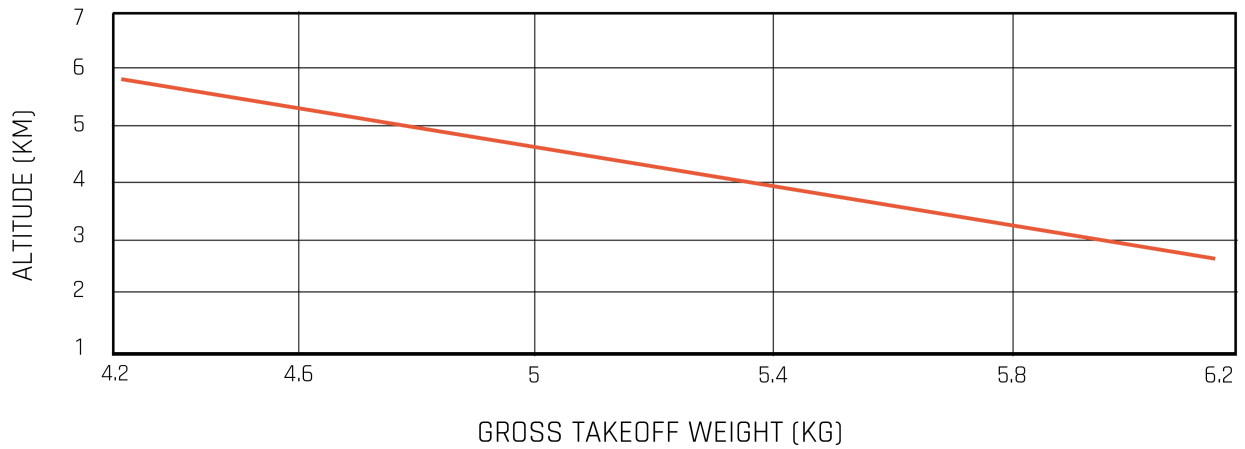


FIGURE 2