



INSPIRED FLIGHT



# IF1200 Hexacopter

Specification Sheet

**INSPIRED FLIGHT TECHNOLOGIES, Inc.**



## AIRCRAFT PERFORMANCE

|   |   |
|---|---|
| Diagonal Size (propeller center to center)  | 995 mm (39.2 inches)                                      |
| Dimensions (unfolded w/ propellers) (WxLxH) | 1445 x 1315 x 705 mm (56.9 x 51.8 x 27.8 inches)          |
| Dimensions (folded) (WxLxH)                 | 600 x 550 x 610 mm (23.6 x 21.7 x 24.0 inches)            |
| Aircraft weight w/o batteries               | 7.6 kg (16.7 lbs)   |
| Aircraft Weight w/ 710 Wh Battery           | 12.0 kg (26.5 lbs)  |
| Aircraft Weight w/ 977 Wh Battery           | 13.4 kg (29.5 lbs)  |
| Aircraft Weight w/ 1332 Wh Battery          | 14.7 kg (32.4 lbs)  |
| Max Recommended Takeoff Weight              | 20.0 kg (44.0 lbs)  |
| Max Payload Weight                          | 8.0 kg (17.6 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                            | 22 m/s (49 mph)   |
| Operating Temperature Range                 | -10°C ~ 40°C (14°F ~ 104°F)                               |
| Max Flight Time                             | See Figure 2 (page 2)                                     |
| Max Altitude                                | See Figure 3 (page 6)                                     |

IF1200 Estimated Flight Times @ Given Payload w/ 10% Reserve

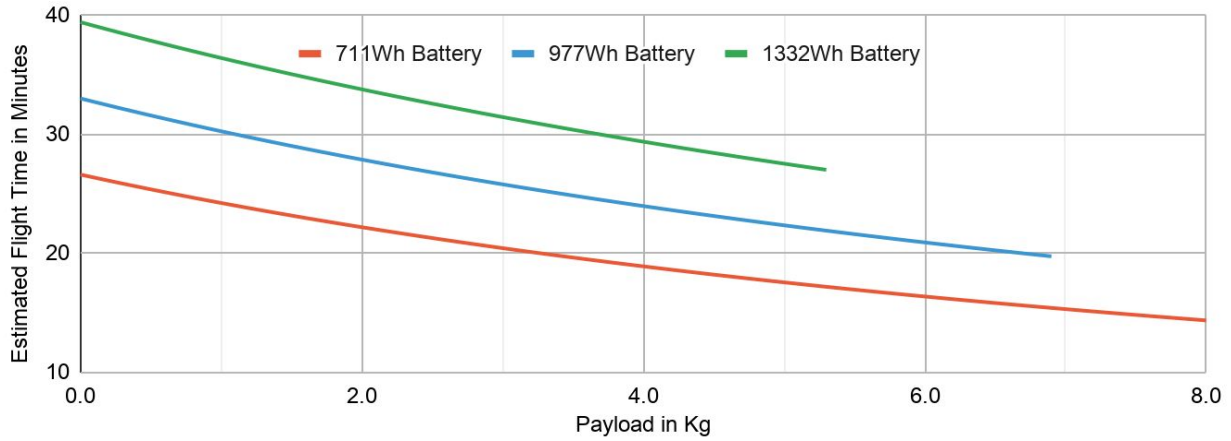


Figure 2

## 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                  | IF-PDB-100407  |
|   | Total Motor Outputs                 | 6x - 50A Continuous  |
|   | Auxiliary Power Rails               | 5v, 12/15/18v, 44v   |
| Propulsion  | Motor                               | 6x - KDE 5215XF 220Kv  |
|   | Propeller                           | 18" x 5.9" (458 x 150 mm)  |
|   | Max Thrust per Motor                | 7.1 kg (15.7 lbs) @ 48v  |
| Default Navigation Light Color Pattern<br>> if preference not specified |                                     | Front Left & Middle Left: Red-ON<br>Front Right & Middle Right: Green-ON<br>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 or 900 MHz                               |
| Aircraft Receiver (RX)       | Duplex R3L EX                                    |
| Signal Range (line of sight) | 2 KM (1 NM)                                      |
| Operating Temperature Range  | -10~85°C (14-185°F)                              |

## TELEMETRY & GROUND STATION

|   |                              |   |
|---|------------------------------|---|
| Compatible Ground Station Software          |                              | QGroundControl V3.X (Linux, Windows, Android) |
| Telemetry Software Standard                 |                              | Mavlink, AT Modem Command                     |
| Telemetry Radio to Ground Station Interface |                              | USB 2.0                                       |
| Operating Temperature Range                 |                              | -40~85°C (40-185°F)                           |
| Microhard Telemetry & Video Radio           | Radio Model                  | Microhard pMDDL2450                           |
|   | Data Rate                    | 25 Mbps                                       |
|   | Encryption                   | AES 256 Bit 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 (5 NM)                            |
|   | Certifications               | FCC, Industry Canada, Japan MIC               |
| RFD Telemetry Radio                         | Radio Model                  | RFD 900x-US (Air/Ground Pair)                 |
|   | Data Rate                    | 250 kbit/s                                    |
|   | Encryption                   | AES 128 Bit 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)                        |
|   | Certifications               | FCC Compliant: CFR15.247, FCC ID: 2ADLE-900X  |



## 710Wh BATTERY

|                                     |                         |                                |
|-------------------------------------|-------------------------|--------------------------------|
| Max Energy at Nominal Voltage       |                         | 710.4 Wh                       |
| Nominal Voltage                     |                         | 44.4 V                         |
| Nominal Capacity                    |                         | 16,000 mAh                     |
| Classification                      |                         | Lithium Polymer 12S1P          |
| Net Weight                          |                         | 4,700 g (10.4 lbs)             |
| Charging                            | Max Current             | 16.0 Amps (1C)                 |
|                                     | Max Voltage             | 50.4 Volts                     |
| Discharge                           | Max Continuous Current  | 240 Amps (15C)                 |
|                                     | Max Burst Current       | 480 Amps (30C)                 |
|                                     | Minimum Voltage Cut-off | 36.0 Volts (40.0v recommended) |
| Self - Discharge                    |                         | <5% per month                  |
| Operating Temperature Range         |                         | -10°C ~ 50°C (14°F ~ 122°F)    |
| Max Payload with one 710 Wh Battery |                         | 8.0 kg (17.6 lbs)              |

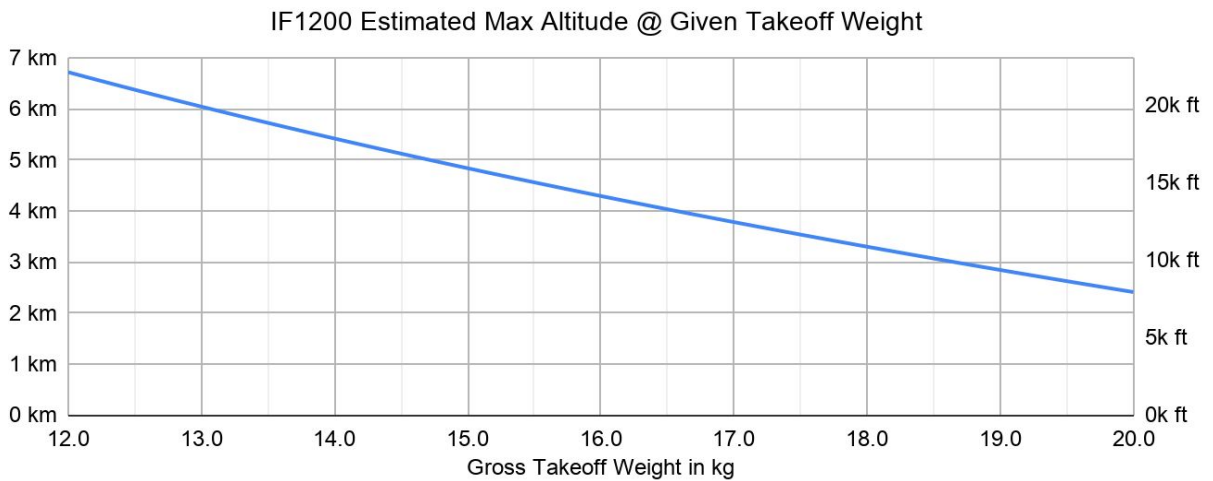
## 977Wh BATTERY

|                                     |                         |                                |
|-------------------------------------|-------------------------|--------------------------------|
| Max Energy at Nominal Voltage       |                         | 976.8 Wh                       |
| Nominal Voltage                     |                         | 44.4 V                         |
| Nominal Capacity                    |                         | 22,000 mAh                     |
| Classification                      |                         | Lithium Polymer 12S1P          |
| Net Weight                          |                         | 5,800 g (12.8 lbs)             |
| Charging                            | Max Current             | 22.0 Amps (1C)                 |
|                                     | Max Voltage             | 50.4 Volts                     |
| Discharge                           | Max Continuous Current  | 550 Amps (25C)                 |
|                                     | Max Burst Current       | 1100 Amps (50C)                |
|                                     | Minimum Voltage Cut-off | 36.0 Volts (40.0v recommended) |
| Self - Discharge                    |                         | <5% per month                  |
| Operating Temperature Range         |                         | -10°C ~ 50°C (14°F ~ 122°F)    |
| Max Payload with one 977 Wh Battery |                         | 6.6 kg (14.5 lbs)              |



## Standard Battery Charger

|                                    |  |              |
|------------------------------------|--|--------------|
| Charger                            | TA1200                                 |              |
| Input Voltage                      | 100v - 240v AC                         |              |
| Output Charge Capacity             | 750w x 2 Channels , Up to 1200w (240v) |              |
| Lithium Battery Compatibility      | Up to 4.2v/cell, 12s 50.4v max         |              |
| Typical Charge Time<br>(0 to 100%) | 710Wh Battery                          | ~75 Minutes  |
|                                    | 977Wh Battery                          | ~110 Minutes |



**Figure 3**