



INSPIRED FLIGHT TECHNOLOGIES, INC.

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IF1200 HEXACOPTER

Information Sheet

Version 1.2, updated September 2022

Specifications

Performance

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
Max Wind Resistance	10 m/s, 12 m/s gusts	19 knot, 23 knot gusts
Max Tilt Angle	35°	
Max Angular Velocity	Tilt: 300°/s, Yaw: 120°/s	
Operating Temperature	-10°C ~ 40°C	14°F ~ 104°F
Operating Humidity	10%~95%	
Service Ceiling (with given payload)	3.4 km (11,150 ft) w/ 4 kg, 1.6 km (5,250 ft) w/ 8.2 kg	

Physical Features

Diagonal Size (propeller center to center)	995 mm	39.2 inches
Unfolded Size (flight ready, WxLxH)	144.5 x 131.5 x 70.5 cm	56.9 x 51.8 x 27.8 inches
Folded Size (stow, WxLxH)	60.0 x 55.0 x 61.0 cm	23.6 x 21.7 x 24.0 inches
Empty Weight (w/o battery)	7.6 kg	16.7 lbs
Weight w/ Battery	13.8 kg	30.4 lbs
Max Gross Takeoff Weight	22.0 kg	48.5 lbs
Max Payload Capacity	8.2 kg	18.1 lbs
Transport Case Size (WxLxH)	59.7 x 83.8 x 47.6 cm	23.5 x 33.0 x 18.8 inches
Transport Case Weight (w/ aircraft & controller)	25.0 kg	55.0 lbs

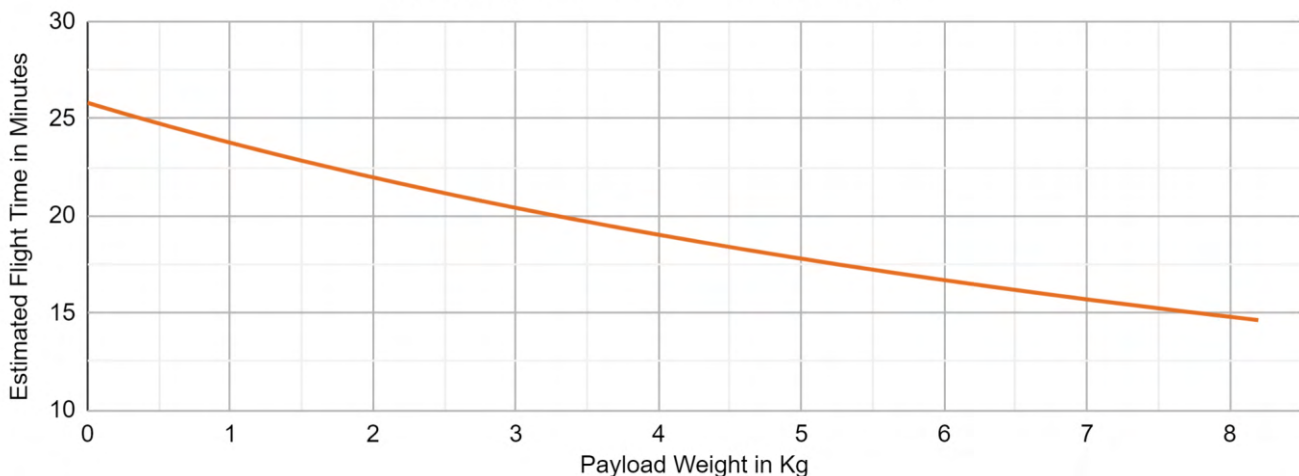
Flight Stack

Flight Controller	ModalAI Flight Core
GNSS / Compass	Mro GPS U-Blox Neo-M9N
Power Distribution Board	IFPDB-101599
Payload Power Rails	5v, 12v/15v, 18v, 44.4v (12s battery voltage)
Payload Interface	IFT Universal Payload Interface V2.1
Operating Software	PX4 Autopilot by Dronecode

Flight Modes

Position	Holds altitude and position, manual positional acceleration
Mission	Executes pre-defined autonomous mission
Return	Auto return to home position and land
Land	Land at the location at which the mode was engaged
Altitude	Holds altitude only, failsafe mode if GPS signal lost

IF1200 Flight Time at Given Payload Weight



Jeti DS-12

Manual Control Console

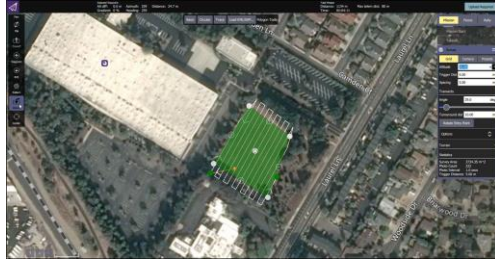
Radio Controller	Jeti Duplex DS-12
Frequency / Power	2.4 GHz @ 100 mW
Signal Range	3 KM (1.5 NM)
RC Weight	725 g



Long Range Telemetry

Ground Control Station

Telemetry Radio	RFD 900X-US (Air/Ground)
Frequency / Power	902-928 MHz up to 1 W
Signal Range	Up to 40 KM (25 Miles)
Encryption	AES 128
GSC Interface	User Provided (PC or tablet compatible with QGC)
GCS Software	QGroundControl V3.X (Linux, Windows, Android)



977Wh Battery

Nominal Energy	776.8 Wh
Nominal Voltage	44.4 V
Nominal Capacity	22,000 mAh
Continuous Discharge	550 Amps (25C)
BMS Self Discharge	To 75% after 48 hours, <5% per month



TA1200 Battery Charger

Input Voltage	100v-240v AC
Max Charge	Up to 4.2v/Cell
Battery Compatibility	12s, 50.4v Max
Typical Fast Charge Time	~95 Minutes (120vAC)
Output Charge Rate	750w x 2 (120vAC), up to 1200w (240vAC)



NDAA & BlueUAS

The IF1200-LRT configuration is compliant with FY20 NDAA Sec. 848 and Executive Order 13981. The Defense Innovation Unit has granted BlueUAS 2.0 Authority To Operate this configuration, certifying that it is pre-approved for use within the Department of Defense.

IFT Universal Payload Interface Connector 2.1

Pin	Pin Name	Description	Notes
1	UPI_PWM1	LED0 on PCA9685	PCA9685 is a PWM controller connected to the i2c bus 2 on the Flight Core.
2	UPI_PWM2	LED1 on PCA9685	
3	UPI_PWM3	LED3 on PCA9685	
4	UPI_PWM4	LED4 on PCA9685	
5	5V	5V Regulator from PDB	Max Current 5A
6	12V or 15V	12V or 15V @ 5A on PDB	Connect B1 on PDB with Jumper for 15v Operation
7	PWM7	PWM7 on Flight Core	Camera triggering
8	PWM8	PWM8 on Flight Core	Camera triggering
9	BAT	12S, ~44.4V @ 5A	
10	UPI_UART1_TXD	Flight Core UART1	UART2_4W_TX_3V3
11	UPI_UART1_RXD	Flight Core UART1	UART2_4W_RX_3V3
12	UPI_UART2_TXD	Flight Core UART2	UART4_2W_TX_3V3
13	UPI_UART2_RXD	Flight Core UART2	UART4_2W_RX_3V3
14	GND	PDB GND	
15	GND	PDB GND	
16	GND	PDB GND	
17	5V 2nd	5V Regulator on PDB	Max Current 5A
18	12V or 15V 2nd	12V or 15V @ 5A on PDB	Connect B1 on PDB with Jumper for 15v Operation
19	GND	PDB GND	
20	GND	PDB GND	
21	18V	18V Regulator	Max Current 5A
22	GND	PDB GND	
23	GND	PDB GND	
24	GND	PDB GND	
25	SBUS	HereLink Air Unit SBUS	Gimbal Control



Payload Size & Mounting Rails

