FLYABILITY

ELIOS 2

ORIGINAL INSTRUCTIONS

EU DECLARATION OF CONFORMITY

We,

Flyability SA

EPFL INNOVATION PARK BLDG C Lausanne CH-1014 Switzerland
Tel: +41 21 311 55 00

declare under our sole responsibility that the product:

ELIOS 2
Model No. 3
Serial Number 3000000-4000000

to which this declaration relates is in conformity with the following standards or other normative documents:

Safety	EN 62368-1:2014 + A11:2017
	EN 62471:2008
EMC	EN 301 489-1 V2.2.0 (2017-03)
	EN 301 489-17 V3.2.0 (2017-03)
Radio	EN 300 328 V2.1.1 (2016-11)
Health (RF Exposure)	EN 62311:2008

following the provisions of

-     Radio Equipment Directive (RED) 2014/53/EU
-     ROHS Directive: 2011/65/EU
-     REACH Regulation: 2006/1907/EC

The Technical Construction File is maintained at:

Flyability SA
EPFL Innovation Park Bldg C, 1015 Lausanne, Switzerland

The authorized representative located within the Community is:

Dr Adrien Briod
Chief Technology Officer
Date: February 15th, 2019

FCC COMPLIANCE NOTICE

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC RF EXPOSURE INFORMATION

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm during normal operation.

IC RSS WARNING

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC RADIATION EXPOSURE STATEMENT

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This eqipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Ce matériel est conforme aux limites de dose d'exposition aux rayonnements, fic rss-102 énoncée dans un autre environnement.cette eqipment devrait être installé et exploité avec distance minimale de 20 entre le radiateur et votre corps.

DISCLAIMER

Terms with initial capital letters shall have the following meanings:

"Agreement"...........means the conditions of use of this Original Instructions and any other agreement between You and Flyability per which the Product has been delivered to You, including but not limited to Flyability's General Terms and Conditions.

"Flyability" ....means Flyability SA, a company incorporated in the Canton of Vaud in Switzerland under federal number CH-550.1.156.670-6 (IDE CHE-348.376.646) having its registered offices at EPFL Innovation Park BLDG C, 1015 Lausanne, Switzerland

"Product"................means all goods and services described in this document.

"You" ....means the person or legal entity to which the Product is delivered or who is operating the aircraft

All rights related to this document and all information it contained are the property of Flyability. REPRODUCTION, USE OR DISCLOSURE TO THIRD PARTIES WITHOUT PRIOR WRITTEN PERMISSION FROM FLYABILITY IS STRICTLY PROHIBITED.

By using the Products, software and systems of Flyability, You fully accept and consent, without reserve, Flyability's warranty and liability terms stated below and all other terms and conditions agreed between You and Flyability.

1.   Product limited warranty

By using the Product, You hereby signify that you have read, fully understood and agreed this disclaimer and the original instructions, and You agree that the Product:

(i)   Can only be operated by Flyability Certified Elios 2 Pilot and, if required by laws, with other drone pilot licenses or any other certification necessary to pilot Elios 2; and

(ii)   Presents a risk of physical injuries if wrongly used; and

(iii)   Presents a risk of damaging Your and Third-parties' property if wrongly used; and

(iv)   May be unfitted to Your needs and purposes; and

(v)   Is intended to be used by Flyability Certified Elios 2 Pilot for industrial and professional purposes only; and

(vi)   Should not be used under influence of alcohol, drugs or any substances that may impair cognitive abilities; and

(vii)   Is subject to local regulations that could prevent its use.

You shall pursue available remedies to You according to the Agreement. The warranty shall exclude defects due to mis-use, non-observation of the Original Instructions, moisture or liquids, explosive gas, proximity or exposure to heat at temperatures exceeding the Operating temperature of 50 degrees Celsius, excessive strain, abuse, neglect, misapplica-tion, repairs or modifications made by anyone other than Flyability or certified by Flyability. There are no express or implied warranties, representations or conditions other than those stated in this limited warranty and the Agreement. The remedy set forth herein and in the Agreement shall be the sole, exclusive remedy with respect to the Product.

2.   Product liability

IN NO EVENT OR UNDER ANY CIRCUMSTANCE, UNLESS EXPRESSLY STATED IN THE AGREEMENT, SHALL FLYABILITY SA, ITS DIRECTORS, OFFICERS OR EMPLOYEES BE LIABLE TO YOU OR TO ANY THIRD PERSON CLAIMING RIGHTS DERIVED FROM YOUR RIGHTS, IN CONTRACT, TORT OR OTHERWISE, FOR INDIRECT, SPECIAL, INCIDENTAL, EXEMPLARY, PUNITIVE OR CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES INCLUDING, BUT NOT LIMITED TO, ANY DAMAGES CAUSED BY YOU OR A THIRD PARTY WHILE OPERATING OR USING THE PRODUCT, ANY DAMAGES CAUSED BY FAILURE OF THE ELECTRONICS OR SOFTWARE, ANY LOSS OF REVENUE, LOSS OF PROFIT, OR LOSS OF DATA WHETHER BASED UPON ANY ALLEGED BREACH OF WARRANTY, REPRESENTATION OR CONDITION, CONTRACT, OR ANY OTHER CONDUCT INCLUDING NEGLIGENCE (INTENTIONAL OR OTHERWISE), GIVING RISE TO SUCH CLAIM. A Party who relies on a breach of the other Party's obligations under this Agreement, shall take any and all reasonable measures in the circumstances to mitigate the consequences, including loss of profit, resulting from the breach. If it fails to take such measures, the Party in breach may claim a reduction in the damages in the amount by which the consequences should have been mitigated.

YOU SHALL NOT OPERATE THE PRODUCT IN AREAS OR UNDER CIRCUMSTANCES WHERE A FAILURE COULD CAUSE DAMAGES AND/OR HARM TO OBJECTS AND/OR PEOPLE. YOU SHOULD HAVE READ AND UNDERSTOOD THE ORIGINAL INSTRUCTIONS COMPLETELY BEFORE OPERATING THE PRODUCT. ANY DAMAGE AND/OR HARM ARISING FROM NOT ACCURATELY FOLLOWING THE PROCESSES AND GUIDANCE FROM THE ORIGINAL INSTRUCTIONS SHALL BE THE SOLE RESPONSIBILITY OF THE OPERATOR OF THE UAV.

ALL USE OF THE PRODUCTS IS UNDER YOUR SOLE REPONSIBILITY, INCLUDING BUT NOT LIMITED TO, THE COMPLIANCE WITH APPLICABLE LAW AND REGULATIONS OF THE COUNTRY IN WHICH THE PRODUCT IS OPERATED.

3. Data storage and usage

When You use the tablet application or any other software provided by Flyability, data regarding the use and operation of the product, such as flight telemetry data (e.g. battery life, altitude, hardware identification) and operations records may be automatically or manually uploaded to a Flyability designed server.

The provided data does not include personal data (e.g. name, address) but identification data, such as user name, that may become associated with, used to identify to such information we Flyability stores it. By using the product, the tablet application or any other software distributed by Flyability, or by manually providing data to Flyability, you consent to:

(i) Our storage of any telemetry data and other data uploaded or provided to us, including in combination with your user name; and

(ii) Our use of any such data uploaded or provided (including your user name) in connection with providing support and services to You and to improve our products.

Authorizations and regulations

SOME COUNTRIES MAY HAVE LAWS THAT LIMIT OR PROHIBIT THE USE OF UNMANNED AIRCRAFT. YOU ARE SOLE RESPONSIBLE FOR SECURING ALL AUTHORIZATIONS, CERTIFICATIONS AND LICENSES REQUIRED FOR THE USE OF THE PRODUCT. FLYABILITY SA DOES NOT PROVIDE ANY LEGAL ADVICE OR COUNSELING AND UNDER NO EVENT SHALL BE LIABLE FOR ANY INFRIGMENT OF ANY APPLICABLE LAW BY YOU.

1 Safety

> ⚠️ **Read carefully and understand these important safety instructions before flying to prevent any risk of accident and serious injuries.**

1.1 Operation Safety Rules

During operation and missions please observe the following rules. Make sure people around you have been briefed about safety accordingly.

WARNING
High speed spining propeller

WARNING
Loud noise

WARNING
Bright light
Flashing Light

WARNING
Hot surfaces

MANDATORY
Read the original instructions

MANDATORY
Wear hear protection

MANDATORY
Wear eye protection

MANDATORY
Wear head protection

MANDATORY
Have protective gloves in vicinity

1. Everyone surrounding the operation, pilot included, must wear eye, ear, and head protections. They must have protective gloves in vicinity[1]. They should not wear jewelry, loose clothing or long hair.

2. Apart from the camera operator, the spotter, or the inspector, no one should talk to the pilot. It may reduce his concentration.

3. When the propellers are spinning, the aircraft must not be touched. If not applicable, make sure the aircraft is stable, touch only the aircraft's protective cage with your hands wide open and your fingers straight to prevent any of them from entering the cage. You must wear protective gloves to touch the aircraft if the propellers are spinning.

4. Avoid any presence of people directly below the aircraft and do not fly close to people.

5. Possibly hazardous optical radiation emitted from this product. Do not look at operating lamp. Eye injury may result.

6. In case of accident, do not try to catch the falling aircraft. Your safety is more important than the aircraft.

7. The area around the pilot, in addition to the takeoff and landing area should all be free from people and obstacles.

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[1] A risk assessment should be made to state additional protection (e.g. respiratory protection in dusty environments)

1.2   General Guidelines

1. The pilot MUST be Flyability Certified Elios 2 Pilot and, if required by laws, with other drone pilot licenses or any other certification necessary to pilot Elios 2.

2. A damaged propeller may break, and pieces of broken blade can become dangerous projectiles and reduce the aircraft reliability. Replace the propeller if it is broken, cracked, bent, or damaged in any way. Operator and surrounding personnel MUST wear safety glasses.

3. Debris can be ejected at high velocity from the aircraft propulsion. Operator and surrounding personnel MUST wear safety glasses.

4. The pilot should always act accordingly to his or her best judgment, focusing on the safety of the people and the environment he or she is flying in. The pilot MUST brief every personnel attending or surrounding the flight about safety. While piloting, the pilot should not move as it may cause him to slip, trip or fall causing personal injuries.

5. DO NOT fly over or near people, moving vehicles. Always give way to other aircrafts. Watch out for low flying helicopters.

6. Operating the Elios 2 system can be stressing, tiring and prone to muscular fatigue. The controller is equipped with a hook. Use the provided controller strap to relieve your muscles. It will also avoid you to lose, drop, or damage the ground control station.

7. During a flight, parts of the aircraft can become very hot. Wait 3 minutes after disarming for it to cool down and access the battery. If time is constraint, you may use protective gloves to change the battery during the cooling period.

8. Using the LED pulsing on Elios 2 can be tiring and stressful for the pilot and surrounding personnel. It can trigger a seizure on person with epilepsy.

9. Front module contains magnet that can disrupt the proper functioning of medical devices or disturbing certain electronic devices in a near field.

10. DO NOT use Elios 2 under influence of alcohol, drugs or any substances that may impair cognitive abilities.

11. A risk assessment MUST be performed before every flight.

12. The pilot MUST always go through the checklists before, during and after each flight.

13. Elios 2, like any remotely piloted aircraft system, must be operated per the laws of the country it is used in. It is the sole responsibility of the pilot to be informed of the applicable restrictions. If you are flying in a public environment or around people, make sure to respect the rules of flight in line of sight.

14. Use only provided Flyability parts, genuine Flyability parts, or parts certified by Flyability. Using other devices or parts combination with Elios 2 (e.g. batteries, propellers, etc.) or performing unauthorized modifications may result in system malfunctioning and/or compromise safety.

15. It is strongly recommended to avoid any operation inside the aircraft's cage when the battery is plugged in, except turning off the aircraft (unplugging the battery).

16. DO NOT wear jewelry, loose clothing or long hair when operating Elios 2 or being in its vicinity.

17. Under no circumstances, objects, fingers or any other body parts may enter inside the aircraft's protective cage while it is armed (when the propellers are spinning). It may result in serious injuries for the person and damage the aircraft.

18. DO NOT perform the arming sequence or arm the aircraft (make propellers spin) before and during the removal or insertion of the battery or if objects, fingers or any other body parts are inside the protective cage.

19. When the propellers are spinning, the aircraft must not be touched. If not applicable, make sure the aircraft is stable, touch only the aircraft's protective cage with your hands wide open and your fingers straight to prevent any of them from entering the cage. You must wear protective gloves to touch the aircraft if the propellers are spinning.

20. Propellers have sharp edges; protective gloves MUST be worn while changing a propeller.

21. If the aircraft is unresponsive due to malfunction, make the disarming sequence and DO NOT try put your hand or fingers into the cage during 1h after the incident. Wear protective gloves to disconnect the battery.

22. After a strong crash (more than 1m free fall), do not touch the aircraft as it may explode or catch fire. If the aircraft is in an enclosed place, or near to an explosive or flammable environment, you may carefully place it in a

properly ventilated area. The aircraft must remain under supervision. A risk assessment should be performed prior taking any actions.

23. It is recommended to use only transport cases approved by Flyability.

24. Read carefully the Battery Safety Guidelines and the Quick Start Guide before using the Elios 2 system.

25. After a flight, wait 3 minutes before touching the parts highlighted on the drawing above:

    a. Motors

    b. Lighting system heatsink
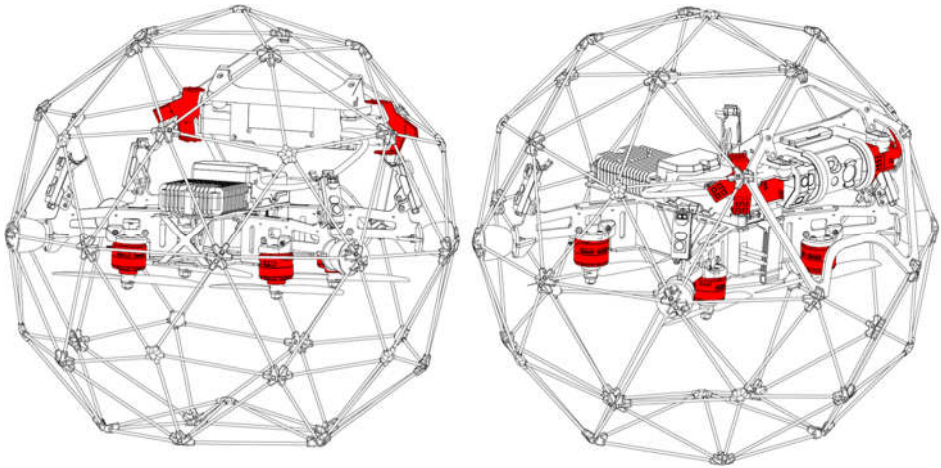
1.3   Environmental Awareness

> ⚠️ **Always fly within the listed conditions. It will reduce incident and damage on the aircraft.**

1. Do not fly close to people.

2. Elios 2 is not waterproof. Do not fly under heavy rain/snow or in humid environments. Moisture can seriously damage the electronics of Elios 2.

3. Store the Elios 2 system in a dry environment between 0°C and 30°C protected from sunlight.

4. Avoid flying in a dusty, or sandy environment or subject to vapor, or gas. If not applicable, avoid flying close to people. Have yourself and surrounding personnel wear eye protection and respiratory protection as the propulsion system may blow dust, vapor or gas to you. Do not forget this topic in your risk assessment. Note that, mechanical parts may deteriorate more rapidly in dusty or sandy environments.

5. Even if the cage protects the aircraft, small objects can penetrate the cage and damage the aircraft. Be sure while flying, that protruding objects and/or any falling objects will not go through the cage as it might break the propellers, damage the aircraft, or create high velocity projectiles. In case of doubt performing a risk assessment is recommended and eye protection MUST be worn.

6. Flying in low pressure environment such as high altitudes above the sea level might reduce flight time, and the stability of the aircraft.

7. The wind has serious effects on Elios 2. If the wind is higher than 3m/s, it should be piloted in **disabled Pilot assist mode**. In this mode and/or with the wind higher than 3m/s, Flyability cannot guaranty Elios 2 capability to sustain a collision. With the wind above 5m/s, Flyability cannot guarantee the stability or flying capability of Elios 2.

8. Very cold temperatures lead to reduced flight times. Do not fly in temperatures below 0°C. If you need to fly within a temperature below 10°C, heat the batteries prior usage using a battery warmer bag and observe safe practices as described in the Battery Safety Guidelines.

9. Hot temperatures – above 40°C – will interfere with the battery performances. The pilot should observe the safe practices regarding the battery described in the Battery Safety Guidelines. Also, Flyability cannot guaranty the collision sustainability of the aircraft above 40°C. The Pilot assist performance may diminish. The maximum power of the lighting system will reduce for the system safety. The aircraft should not be left switched on without propellers spinning in temperature above 40°C, the electronics needs to be cooled down by the airflow generated by the propulsion system. In such temperatures use gloves for changing the battery or wait for at least 10 minutes for the drone to cool down in a zone where the temperature is below 30°C. Pay extra attention to not touch the lighting system heatsinks or the motors during the cooldown period.

10. Flyability cannot guaranty the aircraft flight capability and stability if not used in temperatures from 0°C to 50°C.

11. It is not recommended to operate the aircraft close to power lines, power transformers or other areas with high electromagnetic disturbances as these may cause severe effects on the sensors and transmission system, impacting the aircraft's stability and flying capability.

12. The aircraft propulsion system makes loud noises. Wearing ear protection is mandatory when flying in enclosed areas or when the aircraft is operating close to the personnel.

13. If you are flying in a confined or enclosed place, avoid being inside this environment with the aircraft flying. Do not forget this topic in your risk assessment.

14. Avoid flying in a biohazard environment. If not applicable, avoid flying close to people and have yourself and surrounding personnel wear eye protection and respiratory protection as the propulsion system may blow contaminated particles to you. Also, wear gloves and appropriate protection while manipulating the aircraft and its equipment until further decontamination. Do not forget this topic in your risk assessment.

15. Elios 2 should not be used in or near explosive or flammable environments.

1.4   Maintenance guidelines

To ensure safe and reliable product, the user is asked to observe the following preventive actions:

1. Change pentagons anytime a damage is present.
2. A damaged propeller may break, and pieces of broken blade can become dangerous projectiles and reduce the aircraft reliability. Replace the propeller if it is broken, cracked, bent, or damaged in any way.
3. Change the propeller after 10h of flight.
4. Change the motor after 25h of flight.

2   Checklists

The checklists are a proposed workflow to help operating the Elios 2 system in a safe and efficient manner. They are often updated and the latest versions are available on the my.flyability.com platform.

2.1   Mission Planning Guidelines

This checklist presents the steps that must be followed whilst planning an operation.

1.   Has the Method Statement been filled?

    The Method Statement (MS) is a document specifying all the different steps that will be performed during the inspection. It will also specify all the required equipment to fulfil the mission. The "Method Statement – Template" document offer a template to establish your own.

2.   Has the Risk Assessment been filled?

    The Risk Assessment (RA) is a document specifying all the risks that can occur during the progress of the mission. It states as well the mitigation that can be made to limit the risk to occur. The "Risk Assessment – Template" document offer a template to establish your own.

3.   Is the environment in which the Elios 2 will be operated safe?

    Elios 2 is sensible to its surroundings. The mission environment must comply to the limitation presented in the "Environment Awareness" section presented in the Original Instructions.

    The presence of dangerous elements must have been stated in the RA and MS documents.

4.   Is there any biological hazard?

    If the Elios 2 is flying in environment that can present bio-hazard (sewer, pandemic area, etc.), the risk should be listed within the MS or RA and appropriate measures must be taken (gloves, eye protection, mask, etc.).

5.   Do you have the adequate Personal Protective Equipment (PPE)?

    The following PPE must always be worn:

-    Eye protection.
-    Ear protection.
-    Hard hat.
-    Have protective gloves in vicinity.

    You must be aware of the effects of operating Elios 2 in your working environment and dress accordingly:

-    If the environment is dusty, wear respiratory protection.
-    If the environment contains hazardous element, wear the corresponding PPE.

    Those statements must have been defined in the MS document.

6.   Do you have the proper flight authorization?

    If you perform outdoor flight, depending on the area and on the country in which you will conduct your flight, you will need a specific authorization. Contact the aeronautical agency in place in your country for more information.

7.   Use of the aircraft

    Flyability's products are NOT listed as dual-use products. Ensure the system is not used with the intent to harm.

2.2   Aircraft Inspection

The aircraft inspection checklist ensure the Elios 2 is suited to fly. It should be made before each flight and after having transported the Elios 2. Remember the acronym **PEACE**.

PROPELLERS....................................TIGHT

Propellers are tight on the motors.

ELECTRICAL MOTORS.............................. MOVE FREELY

Make the motors rotate to make sure no dust, sand, or particles are inside

AIRCRAFT.. CLEAR OF DAMAGE

Visually inspect the aircraft to make sure it is free from damage. Pay great attention to carbon parts and pro-pellers.

CAMERA LENS AND SENSORS.................. CLEAN

Clean the camera lens and the sensors using the lens cleaner. It will ensure a better quality for your footage and an increased stability of the aircraft. Make also sure that the camera lens is free of stains.

ELECTRICAL SUPPLY .... UNDAMAGED | SECURED | PLUGGED

A fully charged and in visual proper condition battery is tightly connected to the aircraft and secured with the strap.

2.3   Take-off Checklist

Do the take-off checklist before each flight. Remember the acronym **SAFE.**

SAFETY BRIEFING ....PERFORMED

All personnel surrounding the operation has been briefed about safety using the Basic Safety Rules whilst in operation and are aware that they should avoid perturbing the pilot.

AIRCRAFT....................................CHECKED

The aircraft inspection ensure the Elios 2 is ready to fly.

FLIGHT PLAN ....DONE

The flight plan ensures that the Elios 2 will fly in a safe environment and will gather data in a consistent way.

ENVIRONMENT ....CHECKED

Make sure you are flying in a safe environment complying with the limitation of the system as stated in the Environmental Awareness.

3   Elios 2 Technical Specification

Flight mode	
Types	Velocity control, angle control, manual
Availability	Switch between modes at any time
Fail safes	Auto-landing on low-battery or signal lost
Onboard Electronics	
Avionics-board	Autopilot, thermal video and system management
Power-board	Motor control
Payload-board	Camera, thermal camera and lighting control
Flight system	
Type	Quadcopter configuration
Dimension	Fits in < 400 mm sphere
Motors	4 fast reversing electric brushless motors
Propellers	4 propellers, 5 inches
Take-off weight	1400g including battery, payload & protection
Flight time	Up to 10 mn
Max. climb rate	1.5 m/s
Wind resistance	3 m/s (Pilot assist), 5 m/s (angle mode)
Max groundspeed	1.5 m/s (Pilot assist)
Sensors	IMU, magnetometer, barometer, 7 velocity and distance sensors
Materials	Carbon fiber composites, magnesium alloy, aeronautical grade aluminum, high-quality thermoplastics
Operating temperature	0 ºC to 50 ºC
Ruggedness	Splash and dust resistant (equivalent to IP53 but not certified)
Remote controller (ground system)	
Type	Ergonomic joysticks and payload controls, integrated video outputs
Weight	810 g
Operating temperature	0 ºC to 40 ºC
Output ports	HDMI, SDI, USB
Battery	6000 mAh, 2S
Controls	Payload settings and aircraft control
Options	Optional remote controller (camera operator) with video stream reception on a secondary screen, and dual control of camera settings.
Wireless communication Remote Controller to UAV	
Type	Digital, bidirectional, long range, video and data downlink to remote controller (RC), command and data uplink to UAV
Operating Frequency	2404 – 2483 MHz
Modulation Type	DSSS OFDM
Range	Up to 500 m in direct line of sight
EIRP RC (to UAV)	FCC: ≤20dBm CE: ≤16dBm ; MIC: ≤16dBm
EIRP UAV (to RC)	FCC: ≤ 27dBm ; CE : ≤20dBm ; SRRC : ≤20dBm ; MIC: ≤20dBm
Wireless communication Remote Controller to Camera Operator Remote Controller	
Frequency	5738-5808 MHz 920.6-928 MHz (Japan only)
EIRP RC to RC	5.8GHz: FCC: ≤ 27dBm ; CE : ≤20dBm ; SRRC : ≤20dBm 920MHz: MIC: ≤10dBm
System power	
Type	Lithium polymer battery high voltage, 5 cells, 19V, 5200 mAh, 98.8 Wh
Charging time	1 h
Battery change time	< 1 mn

Integrated payload	
Payload head	Damped from vibrations
Upwards tilt	+80 degrees
Downwards tilt	-60 degrees

Main camera	
Video	4K (3840 x 2160) at 30fps, optimized for low light performance, recorded on board and streamed
Stream	FHD
Horizontal field of view	114 degrees
Vertical field of view	103 degrees
Total vertical field of view	283 degrees (considering payload up/down rotation)
Control modes	Auto with EV correction

Thermal camera	
Type	Lepton 3.5 FLIR
Video	160x120 pixels at 9 fps, recorded on board
Horizontal field of view	56 degrees
Vertical field of view	42 degrees
Sensitivity	<50 mK
Wavelength	LWIR, 8 to 14 µm

Lighting system	
Type	High-efficiency LEDs for even lighting in front, top and bottom, optimized for low impact of dust on picture quality IR light used imrpoved stability
Control	From remote controller, adaptive light beam controlled by camera pitch
Power	35W continous power for front lighting, 120W total lighting

Operational safety & collision worthiness	
Navigation lights	Green and red lights
Protection cage	Carbon fiber cage with soft coating, modular subcomponents for maintenance ease, thermoplastic elastomer suspensions, front opening dimensioned for hand to access inside for swapping batteries
Collision tolerance	Uniform all around the drone, up to 2 m/s on sharp objects, up to 3 m/s on flat objects

Accessories	
Transport case	IATA compliant transport case for checked-in luggage, dimensions: 61 cm x 44 cm x 53 cm
Chargers	5.2 A / 100 W Flyability Elios 2 battery charger, with charging status indicator, RC charger: 17.4 V, 57 W, tablet USB charger: 5 V

Mobile application used during flight (Cockpit)	
Features	Real time video and UAV telemetry, status visualization (remaining battery, payload settings, warnings, etc.), control payload settings and various configurations.
Operating system	Android, optimized for tablet provided with UAV system

Desktop application used after flight (Inspector)	
Features	Video and thermal video viewer (frame by frame), flight log analysis including point of interests recorded during flight, screenshots and flight data export.
Operating system	Windows 7, 8 and 10 (32 and 64 bits)