U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

August 11, 2015

Exemption No. 12415
Regulatory Docket No. FAA–2015–2199

Mr. James J. Guidici
19 Sugar Maple Court
Lake in the Hills, IL 60156

Dear Mr. Guidici:

This letter is to inform you that we have granted your request for exemption. It transmits our decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

By letter dated May 20, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial data collection.

See Appendix A for the petition submitted to the FAA describing the proposed operations and the regulations that the petitioner seeks an exemption.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner.

Airworthiness Certification

The UAS proposed by the petitioner is a DJI Phantom 2 Vision+.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from

14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[1]. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

Our Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Mr. James J. Guidici is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Mr. James J. Guidici is hereafter referred to as the operator.

[1] Aerial data collection includes any remote sensing and measuring by an instrument(s) aboard the UA. Examples include imagery (photography, video, infrared, etc.), electronic measurement (precision surveying, RF analysis, etc.), chemical measurement (particulate measurement, etc.), or any other gathering of data by instruments aboard the UA.

Failure to comply with any of the conditions and limitations of this grant of exemption will be grounds for the immediate suspension or rescission of this exemption.

1. Operations authorized by this grant of exemption are limited to the DJI Phantom 2 Vision+ when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

2. Operations for the purpose of closed-set motion picture and television filming are not permitted.

3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.

4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.

5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.

6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operating documents. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator or any law enforcement official upon request. The

operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then the operator must petition for an amendment to its grant of exemption. The FAA's UAS Integration Office (AFS−80) may be contacted if questions arise regarding updates or revisions to the operating documents.

8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g., replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.

9. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.

10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.

11. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.

12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.

13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with 14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs

(training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However, training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.

16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.

17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.

18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.

19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.

20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least five minutes or with the reserve power recommended by the manufacturer if greater.

21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.

22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification (N−Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.

23. Documents used by the operator to ensure the safe operation and flight of the UAS and any documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

24. The UA must remain clear and give way to all manned aviation operations and activities at all times.

25. The UAS may not be operated by the PIC from any moving device or vehicle.

26. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
    a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The operator must ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations must cease immediately in a manner ensuring the safety of nonparticipating persons; and
    b. The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

    The PIC, VO, operator trainees or essential persons are not considered nonparticipating persons under this exemption.

27. All operations shall be conducted over private or controlled-access property with permission from the property owner/controller or authorized representative. Permission from property owner/controller or authorized representative will be obtained for each flight to be conducted.

28. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported to the FAA's UAS Integration Office (AFS−80) within 24 hours. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov.

If this exemption permits operations for the purpose of closed-set motion picture and television filming and production, the following additional conditions and limitations apply.

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.

30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:
    a. Dates and times for all flights;
    b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
    c. Name and phone number of the person responsible for the on-scene operation of the UAS;
    d. Make, model, and serial or N−Number of UAS to be used;
    e. Name and certificate number of UAS PICs involved in the aerial filming;
    f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
    g. Signature of exemption holder or representative; and
    h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.

31. Flight operations may be conducted closer than 500 feet from participating persons consenting to be involved and necessary for the filming production, as specified in the exemption holder's MPTOM.

Unless otherwise specified in this grant of exemption, the UAS, the UAS PIC, and the UAS operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

This exemption terminates on August 31, 2017, unless sooner superseded or rescinded.

Sincerely,
/s/
John S. Duncan
Director, Flight Standards Service

Enclosures

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20 May 2015

Hon. Michael Huerta
Administrator
Federal Aviation Administration
U. S. Department of Transportation
Docket Management System
1200 New Jersey Ave., SE
Washington, DC 20590

Re: Summary Exemption Request under Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations from certain parts of the FARs.

Dear Administrator Huerta:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the Reform Act) and 14 C.F.R. Part 11, James J. Guidici (or the "Petitioner"), hereby applies for a summary exemption from the listed Federal Aviation Regulations ("FARs") to allow him to operate small Unmanned Aircraft Systems ("UAS") for aerial data collection, under the conditions and limitations set forth in this Petition.

The requested exemption would permit the operation of small, unmanned and relatively inexpensive UAS under controlled conditions in airspace that is (1) limited, (2) predetermined, and (3) would provide safety enhancements to the already safe news gathering operations presently using manned helicopters and airplanes. Approval of this exemption would thereby enhance safety and fulfill the FAA Administrator's responsibilities to "…establish requirements for the safe operation of such aircraft systems in the national airspace system." Section 333(c) of the Reform Act.

The name and address of the applicant and his Counsel:

James J. Guidici
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Lake in the Hills, IL 60156
847-951-5448
jguidici@me.com

Regulations from which the exemption is requested:

14 CFR Part 21
14 C.F.R. § 45.23(b)
14 CFR § 61.3
14 C.F.R. § 91.7 (a)
14 CFR § 91.9 (b) (2)
14 C.F.R. § 91.103
14 C.F.R. § 91.109
14 C.F. R. § 91.119
14 C.F.R. § 91.121
14 CFR § 91.151 (a)
14 CFR § 91.203 (a) & (b)
14 CFR § 91.205(b)
14 CFR § 91.215
14 CFR § 91.405 (a)
14 CFR § 407 (a) (1)
14 CFR § 409 (a) (2)
14 CFR § 417 (a) & (b) 3

The Appendix describes the FARs from which an exemption is requested and summarizes the justification for each requested exemption.

The Petition is submitted to fulfill Congress' goal under Section 333(a) through (c) of the Reform Act, which directs the Secretary of Transportation to consider whether certain unmanned aircraft systems may operate safely in the national airspace system (NAS) before completion of the rulemaking required under Section 332 of the Reform Act. In making this determination, the Administrator must determine which types of UASs do not create a hazard to users of the NAS or the public or pose a threat to national security in light of the following:

• The UAS's size, weight, speed, and operational capability;
• Operation of the UAS in close proximity to airports and populated areas; and
• Operation of the UAS within visual line of sight of the operator.

Reform Act § 333 (a).

If the Adminstrator determines that such vehicles "may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft in the national airspace system." Id. § 333(c) (emphasis added). The Secretary has delegated his aviation authority to the Administrator of the FAA. The Federal Aviation Act expressly grants the FAA the authority to grant exemptions from its regulatory requirements for civil aircraft, a term defined under §40101 of the Act, which includes sUASs. The Administrator may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any sections 44702-44716 of the Federal Aviation Act if Administrator finds the exemption in the public interest. 49 U.S.C. § 44701(f) See also 49 USC § 44711(a); 49 USC § 44704; 14 CFR §91.203 (a) (1).

Summary of Request:

As a long time radio control pilot, I am requesting an exception, and permission to use my UAS, DJI Phantom 2 Vision+ (further in this report are the detailed specifications of the UAS), for the purpose of taking aerial photos and videos for the home real estate business, and for commercial businesses real estate property in the suburbs of the greater Chicago area. This is a technology that is perfect for realtors to help the potential home buyer get a better perspective of the home and neighborhood they are considering. This is important in the rural and suburban areas, where the homes typically have a larger piece of real estate, with mature landscaping, large trees, and perhaps heavily wooded. Their view of the property will be greatly enhanced, providing for a perspective never before seen. For the commercial business owner, it helps them show a complete view of perhaps acres of their property for TV/Internet commercials, and /or on their websites, ie: auto dealers, enhancing their growth opportunities. I am also planning to purchase a DJI Inspire 1 this summer. This UAS is similar in many ways to the DJI Phantom Vision 2+. The differences are that is has an enhanced camera with 4K filming capability, it has landing gear that retracts, and its weight is 6.5 lbs. (the specs for this UAS are also included).

Why the exemption would not adversely affect safety:

This can be done very safely in a controlled environment, on private property, with limited airtime required, extremely low noise, in uncongested areas. The UAS will always be operated in a Visual Line of Sight (VLOS) environment, with an observer, and always under 400 feet.

Prior to flight, I go through a "pre-flight" checklist:

1. verify propellers are properly secured and not damaged.
2. ensure all batteries are fully charged
    a. UAS battery
    b. Transmitter/controller battery
    c. Wi-Fi range extender battery
3. turn on transmitter & range extender
4. turn on UAS battery
5. initiate a "calibration" procedure for the Compass
6. place UAS in a safe position on the ground for takeoff
7. turn motors on
8. verify there are 6 or more satellites acquired
9. initiate takeoff
10. hover at 10 – 15 feet and verify all controls are operating properly
11. initiate flight plan
12. upon completion of flight plan, ensure a safe environment exists for a safe landing, and inspect UAS prior to another flight for air worthiness

Description of UAS:

The DJI Phantom Vision 2+ (UAS) operates on 5.8 GHz, and weighs 2.7 pounds. Serial # BF1613340486263. It has a very sophisticated flight control system (DJI NAZA–M V2), and includes a Gyro, Compass, GPS, and camera that is on a three axis gimbal. The flight system includes a "Failsafe" function, where if signal is lost, or interference occurs with the controller, or it fly's out of range, the UAS will automatically return to its "home" position. It also provides altitude & radius flight adjustment settings, for maximum height and distance.

It will also "altitude hold- auto hover" if radio control sticks are released. And, in order to increase flight safety and prevent accidental flights in restricted areas, the new firmware for the Phantom 2 series includes a "No Fly Zone" feature. These zones have been divided into two categories: A - large international airports and, B - small local airports. http://www.dji.com/fly-safe/category

Exceeding the control range of the remote control will trigger 'Return-to-Home', meaning the Phantom 2 Vision+ will automatically fly back to its takeoff point and land safely.

Using Wi-Fi and a Wi-Fi Range Extender, the camera transmits live video to my Apple iPhone 6 or iPad Mini 2, all of which comply with FCC requirements. The DJI Vision App shows, altitude, direction of flight, distance from home, speed, location, number of satellites acquired, and battery level.

Pilot in Command (PIC) Background and experience:

I have 30 years experience in flying radio control UAS aircraft, and have been flying radio control airplanes since the mid 80's. My current inventory totals 30 electric aircraft, including fixed wing prop planes, mostly WWII war birds, EDF (electric ducted fan) jets, and multi-copters. I am a Viet Nam veteran, USAF, and I am currently retired from the technology industry. I have always been intrigued with any new technology, and generally have always been an early adopter.

I am a member of the Academy of Model Aeronautics, with a very good understanding of aeronautics, and I have always been an extremely responsible UAS pilot. I am in great health. Being retired, and on a fixed income, I would like to take advantage of my hobby skills, in a commercial way, to help generate additional revenue for living expenses. I have been into video and photography, as a hobby, my entire life. This new technology ties together, both of my long time hobbies. I am currently in process of getting my Sport Pilot Certificate, and I hold a valid drivers license from the State of Illinois.

Why the public would be served by granting this exemption:

I believe this is a technology that can benefit realtors and commercial businesses, in a huge way. The industry is anxious to have this technology enhance their ability to market properties from a totally new perspective, because the aerial perspective is very impressive. By increasing their marketing potential it can increase home sales, benefiting Realtor, buyer and seller. That is a win, win, win. For the commercial business owner, that new aerial perspective can increase market awareness and growth, with greater recognition of business message, physical presence, inventory (in the case of an auto dealer) and location.

The Petition to use a UAS for aerial data collection and its proposed limitations are similar in all material respects to those approved by the FAA in Grants of Exemption Nos. 11062 to Astraeus Aerial (see Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (see Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (see Docket No. FAA−2014−0382), 11213 to Aeryon Labs, Inc. (see Docket No. FAA−2014−0642) and 11310 to Colin Hinkle (see Docket No. FAA-2014-0608). In those grants the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the Petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, 11213, and 11310 also apply to the situation presented by this Petition.

Respectfully Submitted,

James J. Guidici

APPENDIX

FAR section	Subject	Justification
14 CFR § 45.23(b)	Requirement to display registration number on vehicle	Insufficient space on vehicle
14 CFR Part 21	Aircraft certification requirements and procedures	Designed for manned aircraft; not suitable for off-the-shelf UAS
14 CFR § 61.3	Requirement for pilot certificate	Part 61 requirements designed for manned aircraft, not UAS; petition describes training for UAS operator
14 CFR § 91.7 (a)	Airworthiness requirement	Designed for manned aircraft; not suitable for off-the-shelf UAS
14 CFR § 91.9 (b) (2)	Requirement for manual to be available in the cockpit	No one aboard to read manual
14 CFR § 91.103(b)	Requirement for crew members to be onboard	Unmanned vehicle
14 CFR § 91.109	Requirement for dual controls during flight instruction	No one aboard to operate controls
14 CFR § 91.119	Minimum altitudes for safe flight	Safety requires operation below these altitudes
14 CFR § 91.121	Altimeter settings	No one aboard to read altimeter
14 CFR § 91.151(a)	Fuel requirements	Vehicle does not use fuel
14 CFR § 91.203 (a) & (b)	Requirement for registration and airworthiness certificates to be onboard	No one aboard to read certificates
14 CFR § 91.205(b)	Cockpit instruments	No one aboard to read
14 CFR § 91.215	Transponder requirement	Vehicle has insufficient useful load; will be operated below ATC radar coverage
14 CFR § 91.405 (a)	Inspection requirements	Designed for manned

		aircraft; not suitable for off-the-shelf UAS
14 CFR § 91.407(a) (1)	Inspection approval requirements	Designed for manned aircraft; not suitable for off-the-shelf UAS
14 CFR § 91.409 (a) (2)	Airworthiness inspection	Designed for manned aircraft; not suitable for off-the-shelf UAS
14 CFR § 91.417 (a) & (b)	Maintenance records requirements	Designed for manned aircraft; not suitable for off-the-shelf UAS

Further details of the DJI Phantom Vision 2+, and a PDF of the manual can be viewed and downloaded here:
http://www.dji.com/product/phantom-2-vision-plus

Aircraft	Supported Battery DJI 5200mAh LiPo Battery Weight (Battery & Propellers Included) 1242g Hover Accuracy (Ready To Fly) Vertical: 0.8m; Horizontal: 2.5m Max Yaw Angular Velocity 200°/s Max Tiltable Angle 35° Max Ascent / Descent Speed Ascent: 6m/s; Descent: 2m/s Max Flight Speed 15m/s (Not Recommended) Diagonal Motor-Motor Distance 350mm
Gimbal	Working Current Static : 750mA; Dynamic : 900mA Control Accuracy ±0.03° Controllable Range Pitch : -90°─0° Maximum Angular Speed Pitch : 90°/s
Camera	Operating Environment Temperature 0□-40□ Sensor Size 1/2.3" Effective Pixels 14 Megapixels Resolution 4384×3288 Hd Recording 1080p30 & 720p Recording Fov 110° / 85°

Remote Control	Operating Frequency 5.728 GHz—5.85 GHz Communication Distance (Open Area) CE Compliance: 400m; FCC Compliance: 800m Receiver Sensitivity (1%Per) -93dBm Transmitter Power CE Compliance: 25mW; FCC Compliance: 100mW Working Voltage 120 mA@3.7V Built-In Lipo Battery Working Current/Capacity 3.7V, 2000mAh
Range Extender	Operating Frequency 2412-2462MHz Communication Distance (Open Area) 500-700m Transmitter Power 20dBm Power Consumption 2W
DJI VISION App	System Requirement Of Mobile Device iOS version 6.1 or above/ Android system version 4.0 Mobile Device Support • iOS recommended: iPhone 4s, iPhone 5, iPhone 6, • iPhone 6 Plus • iPod touch 5 (available but not recommended: • iPad 3, iPad 4, iPad mini) • Android recommended: Samsung Galaxy S3, S4, • Note 2, Note 3 or phones of similar configuration

These are the specifications for the DJI Inspire 1.

http://www.dji.com/product/inspire-1

Aircraft	Model T600 Weight (Battery Included) 2935 g Hovering Accuracy (Gps Mode) Vertical: 0.5 m Horizontal: 2.5 m Max Angular Velocity Pitch: 300°/s Yaw: 150°/s Max Tilt Angle 35° Max Ascent Speed 5 m/s Max Descent Speed 4 m/s Max Speed 22 m/s (ATTI mode, no wind) Max Flight Altitude 4500 m Max Wind Speed Resistance 10 m/s Max Flight Time Approximately 18 minutes Motor Model DJI 3510 Propeller Model DJI 1345 Indoor Hovering Enabled by default Operating Temperature Range -10° to 40° C Diagonal Distance 559 to 581 mm Dimensions 438x451x301 mm

Gimbal	Model ZENMUSE X3 Output Power (With Camera) Static: 9 W In Motion: 11 W Operating Current Station: 750 mA Motion: 900 mA Angular Vibration Range ±0.03° Mounting Detachable Controllable Range Pitch: -90° to +30° Pan: ±320° Mechanical Range Pitch: -125° to +45° Pan: ±330° Max Controllable Speed Pitch: 120°/s Pan: 180°/s
Camera	Name X3 Model FC350 Total Pixels 12.76M Effective Pixels 12.4M Image Max Size 4000x3000 Iso Range 100-3200 (video) 100-1600 (photo) Electronic Shutter Speed 8s － 1/8000s Fov (Field Of View) 94° Cmos Sony EXMOR 1/2.3” Lens 20mm (35mm format equivalent)f/2.8 focus at ∞ 9 Elements in 9 groups Anti-distortion Still Photography Modes

	Single shoot Burst shooting: 3/5/7 frames Auto Exposure Bracketing (AEB): 3/5 bracketed fram Time-lapse Video Recording Modes UHD (4K): 4096x2160p24/25, 3840x2160p24/25/30 FHD: 1920x1080p24/25/30/48/50/60 HD: 1280x720p24/25/30/48/50/60 Max Bitrate Of Video Storage 60 Mbps Supported File Formats FAT32/exFAT Photo: JPEG, DNG Video: MP4/MOV (MPEG-4 AVC/H.264) Supported Sd Card Types Micro SD Max capacity: 64 GB. Class 10 or UHS-1 rating requi Operating Temperature Range 0° to 40° C
Remote Controller	Name C1 Operating Frequency 922.7~927.7 MHz (Japan Only) 5.725~5.825 GHz 2.400~2.483 GHz Transmitting Distance (Outdoor And Unobstructed) 2 km Eirp 10dBm@900m, 13dBm@5.8G, 20dBm@2.4G Video Output Port USB, mini-HDMI Power Supply Built-in battery Charging DJI charger Dual User Capability Host-and-Slave connection Mobile Device Holder Tablet or Phone Max Mobile Device Width 170mm Output Power 9 W Operating Temperature Range -10° to 40° C

	Storage Temperature Range Less than 3 months: -20° to 45° C More than 3 months: 22° to 28° C Charging Temperature Range 0-40° C Battery 6000 mAh LiPo 2S
Charger	Model A14-100P1A Voltage 26.3 V Rated Power 100 W
Battery (Standard)	Name Intelligent Flight Battery Model TB47 Capacity 4500 mAh Voltage 22.2 V Battery Type LiPo 6S High voltage battery Energy 99.9 Wh Net Weight 570 g Operating Temperature Range -10° to 40° C Storage Temperature Range Less than 3 months: -20° to 45° C More than 3 months: 22° C to 28° C Charging Temperature Range 0° to 40° C Max Charging Power 180 W
Battery (Optional)	Name Intelligent Flight Battery Model TB48 Capacity 5700 mAh Voltage 22.8 V Battery Type

	LiPo 6S Energy 129.96 Wh Net Weight 670 g Operating Temperature Range -10° to 40° C Storage Temperature Range Less than 3 months: -20 to 45° C More than 3 months: 22° to 28° C Charging Temperature Range 0° to 40° C Max Charging Power 180 W
Vision Positioning	Velocity Range Below 8 m/s (2 m above ground) Altitude Range 5-500 cm Operating Environment Brightly lit (lux > 15) patterned surfaces Operating Range 0-250 cm
DJI Pilot App	Mobile Device System Requirements iOS 8.0 or later Android 4.1.2 or later Supported Mobile Devices * Compatible with iPhone 5s, iPhone 6, iPhone 6 Plus iPad Air, iPad Air Wi-Fi + Cellular, iPad mini 2, iPad mini 2 Wi-Fi + Cellular, iPad Air 2, iPad Air 2 Wi-Fi • Samsung S5, Note 3, Sony Xperia Z3, Google • Nexus 7 II, Google Nexus 9, Mi 3, Nubia Z7 • mini *Support for additional Android devices available as t testing and development continues