

Mitigate Risk and Strengthen Product Preference of Unmanned Aerial Vehicles

Certify and confidently market UAV electrical system safety compliance with UL 3030

The rapid increase in the use of Unmanned Aerial Vehicles (UAVs) or drones to fulfill commercial or tactical objectives will require safe battery and electrical systems. The increasing demands put on the electrical system present safety challenges that must be proactively addressed.

UL 3030 establishes a baseline for battery and electrical systems to help mitigate electric shock and fire hazards and enables common expectation of safe use. This certification can be used to help ensure users and regulators, such as the FAA, that the UAV has been evaluated to the appropriate safety standards available.

UL 3030 addresses requirements for the electrical system of the UAV for commercial applications (such as agricultural, scientific, research, government, local police, search & rescue, video for film industry or news broadcasts, and roof inspections). UAVs covered by UL 3030 are intended to be operated by trained pilots and while aspects such as airworthiness, efficacy of controls, and similar topics will be out of scope; these must be addressed by regulations, user programs and/or other standards.



ENCLOSURE STRENGTH REQUIREMENT

- Impact
- Mold Stress
- Water Exposure
- Drop
- Crush

FUNCTIONAL SAFETY REQUIREMENT

- An Analysis of Potential Hazards
- Protection Circuits

BATTERY AND CHARGER REQUIREMENT

- Battery Cell
- Battery Pack
- BMS

MOTOR REQUIREMENT

- Overload Conditions
- Maximum Anticipated Load
- Hazardous Voltage Circuits

PROTECTION AGAINST INJURY

- Sharp Edges
- Strength of Enclosures

PERFORMANCE

- A Myriad of Performance Tests

Improve time to market and reduce costs

Early engagement with UL in your UAV design process provides access to compliance expertise and tools that can help avoid obstacles in the certification process. Keep your product delivery schedule on track with UL's modular approach to product certification. It streamlines the process and identifies potential non-compliances. The phased approach can help increase speed to market, obtain a competitive advantage, strengthen product preference and reduce costs.

To learn more visit [UL.com/drones](https://www.ul.com/drones) or email: eMobility@ul.com



Modular Product Certification Approach



- Early design review
- Project framework
- Sample if available

- Clause by clause review of product to standard
- Prototype sample needed

- Based on test plan from Phase 1 & 2
- Maximum of 10 samples required

- Final packaging
- Notice of authorization & certification
- User manual review

*Please note: The testing below may not always be necessary:

- Functional Safety: The scope is determined upon evaluation of customer's FMEA (Failure Mode Effects Analysis) evaluation, and is commonly required
- Wireless (FCC): For Bluetooth + Bluetooth Low Energy (BLE) radios

When applicable:

- Functional Safety*
- Wireless (FCC)*



Why choose UL?

UL drives global research and standards to continually advance and meet ever-evolving product safety, performance and interoperability needs. UL's global network of technical experts and state-of-the-art facilities, along with our longstanding relationships with regulatory authorities, partner laboratories and industry technical leaders, helps manufacturers gain the compliance credentials they need to compete in a more complex global supply chain.

Knowledge You Can Trust – our experienced staff will advise you from the initial design stage of product development through testing and production. Our experts can assist you in understanding the certification requirements for your specific markets.

Speed & Efficiency – our cost-effective systems and state-of-the-art facilities cut through the red tape and help accelerate your time to market.

Single Source Provider – UL meets all of your compliance needs and, by bundling safety, performance and interoperability services, also helps save you valuable time and money.

Global Reach & Access – our global network of expert engineers helps you understand the various national and global requirements for your specific market application.

To learn more visit UL.com/drones or email: eMobility@ul.com