

# Highly reliable power supply required for tethered drone lighting solution

## INDUSTRY

Industrial

## SOLUTION

Artesyn AIF06 Series

## EQUIPMENT

Tethered Drone

## CHALLENGE

A leader in research and development of unmanned aerial vehicles (UAVs) has created an automated launch-and-landing tethered lighting workstation that can be widely used to illuminate up to a 4,000 square meter area for application in emergency events situations, major events, aerial surveillance, and reconnaissance. The aircraft is tethered to a ground station that is the source of high-voltage DC power to a drone platform via a 30-meter cable. Designed for rapid deployment and to remain airborne for up to eight hours, this low-altitude system required a robust and reliable power supply, able to withstand a variety of environmental conditions.

## SOLUTION

Advanced Energy's Artesyn AIF06ZPFC high voltage power supply was able to provide the customer with the power, size and reliability needed for their application.

Designed to operate consistently in demanding environments, the AIF06ZPFC served as an excellent choice to deliver stable, long endurance power. By working closely with the customer and utilizing Advanced Energy's expertise in high voltage power supply design, manufacturing, and applications, our team was able to successfully satisfy all the requirements.



Additional features of the AIF06ZPFC series:

- Output voltage of 400 VDC with an adjustment range from 330 to 408 VDC
- Operating temperature between -40 to 100°C
- 2,400 W maximum power
- High efficiency (97.35%) in a high, power-dense form factor
- Internal inrush-limiter function
- Design optimized for contact-cooled applications
- PMBus digital communication for monitoring and control

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## RESULT

The AIF06ZPFC series provided a complete power solution, enabling the customer to launch their new system ahead of competitors. The ultra-high power density and on-board application-focused functionality of the module coupled with the efficiency, high reliability and timely technical support were key factors in the customer's selection process.

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## CONCLUSION

The robust and rugged design of the AIF06ZPFC enabled designers to create highly demanding and complex products while providing high reliability and performance, maximizing the power factor, and increasing overall efficiency in even the most demanding environmental conditions and size constraints.

Additionally, Advanced Energy's historically high reliability in continuous-use contact-cooled applications and experience in providing reference designs enabled fast development and deployment of the customer's UAV systems.



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