



## LIGHTNING TEST LABORATORY

# RELIABLE AND EXPERIENCED

## Comprehensive lightning test lab services and aerospace certification

Since 1978, when composite structures were first introduced to commercial nacelle systems, Collins Aerospace has been performing simulated lightning tests. In 1983, we invested in new technology and opened our own lightning test laboratory. As we expanded our capabilities, we investigated the direct effects of lightning attachment to aircraft structures and obtained FAA certification for nacelle component designs.

At Collins Aerospace, we are more than just a test facility, we are your partner. Our testing center has provided test services for nearly every large commercial aircraft flying today, including the Airbus A220, A330, A320, A320NEO, A350 XWB, Boeing 747, 767, 787 as well as multiple regional and business aircraft.

We offer a host of comprehensive services including test design, test article fabrication, rig building, testing and certification. We also coordinate additional tests with our in-house network of test centers and engineering resources to provide complete testing services. Through our ACE operating system, we focus on Lean practices and cost efficiencies, striving for highly competitive pricing.

### KEY FEATURES AND BENEFITS

- More than 40 years of lightning test experience
- Testing performed on nearly all large commercial aircraft
- Highly competitive pricing

# Lightning test laboratory overview

## TEST FACILITY

- 2000 sq. ft. indoor lightning test laboratory
- Facility meets requirements for the certification of structures with respect to the direct effects of a lightning strike
- Compliant to SAE ARP 5412/ED-84, ARP 5416/ED-105, DO-160/ED-14, SAE AE4L or AC 20-53A requirements
- Multi-kilojoule storage capacitor banks
- Marx impulse voltage generator

## EQUIPMENT SPECIFICATIONS

- Simulated lightning strikes with 200 kA peak currents and an action integral of  $2.0 \times 10^6 \text{A}^2\text{-s}$
- Other lightning current waveforms are available from additional capacitor banks or from a storage battery
- Major components of our facility include:
  - Marx impulse voltage generator; 6-stage, 0.03  $\mu\text{F}$ , 150 - 600 kV, 0.5 C
  - High current generator; approximately 140  $\mu\text{F}$ , 0 - 40 kV DC
  - Intermediate current generator; 2400  $\mu\text{F}$ , 0 - 8 kV DC
  - Storage battery; 1500 V DC

## DATA ACQUISITION AND CONTROL

The facility is equipped with current monitors, digital storage oscilloscopes and high voltage test equipment. All lightning test equipment is calibrated prior to certification tests and calibrations are traceable to the National Institute of Standards and Technology.

## TEST SECTION

- Standard setup accommodates typical 24" x 24" or 36" x 36" flat panel
- Customized setups within an 8' x 8' test area

Specifications subject to change without notice.

Subject to Collins Aerospace standard terms and conditions. Please contact us for details.

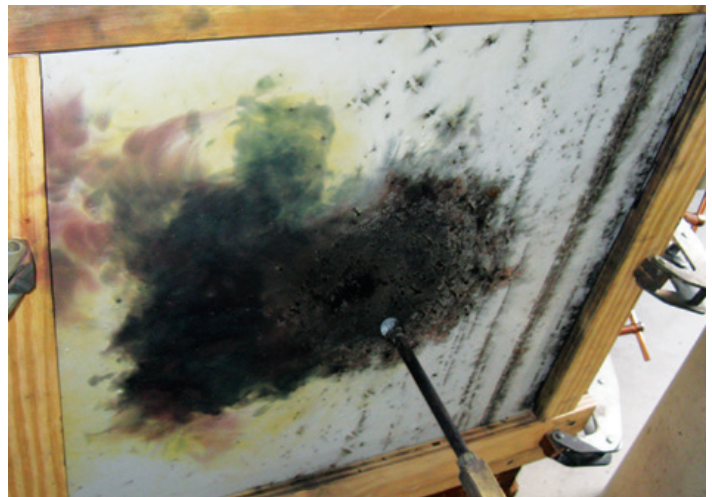
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Lightning test facility



Lightning strike



Lightning strike test (post-test)



### Collins Aerospace

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