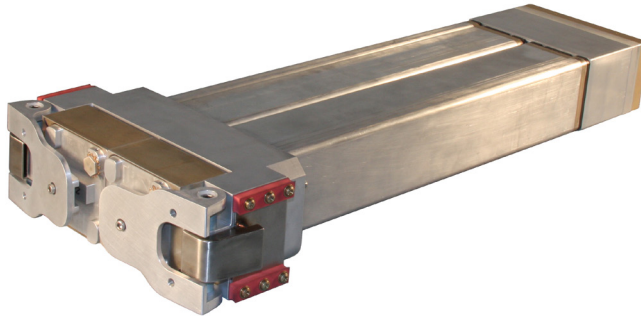


**Aeromechanical Systems** > Countermeasures

## SM-50 Magazine/Pre-emptive IR protection



The SM-50 Magazine converts the ALE-50 RF decoy system into an advanced infrared expendable decoy system. It does this in a flightline configurable manner, in that the only action required to prepare the system for flight, is to install the appropriate magazine (ALE-50 RF decoy or SM-50 IR decoy).

The SM-50 capitalizes on the existing ALE-50 launcher system in three main areas:

- 1) It uses the ALE-50 chassis to house the SM-50 magazine
- 2) It uses the ALE-50 conditioned/redundant power and (squib fire) commands sent from the cockpit
- 3) It passes BIT information through the ALE-50 launch controller back to the cockpit

The SM-50 can be installed in aircraft equipped with ALE-50 decoy dispensers (such as the F-16) with no aircraft modifications. It can be programmed to dispense pyrophoric material continuously or to dispense in bursts of virtually any duration and separation ("patterns"). The SM-50 system consists of a magazine (electrical backplane, transmission, and flange) and two o-ring sealed canisters that are installed in the magazine. When the canister is loaded with pyrophoric material, it is referred to as a "canister decoy". Various types of pyrophoric materials exist to decoy different IR missile threats. The SM-50 magazine can "recognize" canisters loaded with four different types of material via internal Hall sensors and the presence or absence of magnets on the canisters. The magazine can be programmed with different dispense patterns and/or dispense rates for each material type. Dispensing from two canisters loaded with different materials, simultaneously, is also possible.

The SM-50 magazine has the same form factor and interfaces as a standard ALE-50 magazine. It carries two SM-50 canisters. Each canister is a sealed metal enclosure containing pyrophoric material. An internal drive screw, rotated by a motor/clutch, drives a piston aft from the forward end of the magazine, and drives a metering device at the aft end, both forcing the material into the air stream. Upon initiation, when the drive screw is first turned, it allows a hinged end cap to swing open allowing the release of the material. Until the end cap opens, the canister is sealed by O-rings providing an air-tight package, providing years of shelf life and service life. During dispensing, the magazine drive motor spins continuously, and the material dispense rate and pattern are controlled by pulsing the clutch.

### Key features

- Fits in ALE-50 launcher
- Metering allows fine control over pattern
- Missile warning not required, can be pre-emptive with simple on/off switch
- Dispense pattern can be stored in magazine itself
- Sealed metal can for long shelf life

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# SM-50 Magazine/Pre-emptive IR protection

## Specifications

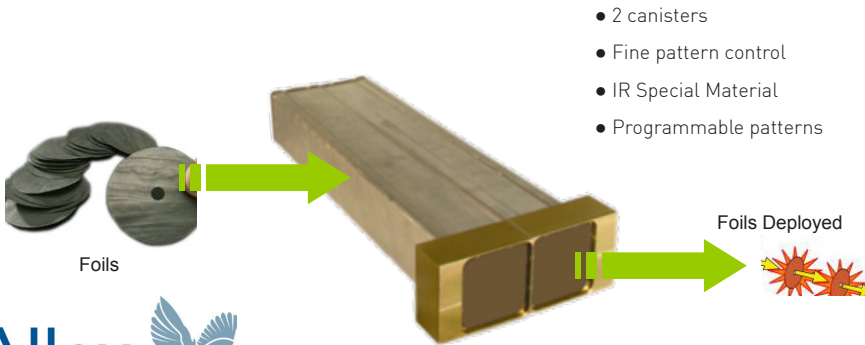
Size	3" x 8" x 24"
Weight	30 lbs
Power	Compatible with ALE-50
Aircraft systems interface/mounting	ALE-50 launcher
Pyrotechnics	none
Environmental	Operating temperature -54c to 70c Storage temperature -65c to 90c

## Contact

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SM-50 being installed on F-16 aircraft

Specification subject to change - TCO Review #76