



Actual BDA size

ECLIPSE

(Economic Compact Lightweight Pointer-tracker System) for DIRCM Applications

The ECLIPSE is a stabilised, two-axis pointer tracker designed for use as part of the Directed InfraRed CounterMeasure (DIRCM) System. The design capitalises on our existing DIRCM pedigree, formulated through the design and delivery of over 1000 combat-proven transmitters to Northrop Grumman Corporation for use in its AN/ AAQ-24(V) NEMESIS DIRCM system.

DIRCM systems are used to protect aircraft from IR guided Man Portable Air Defence Systems (MANPADS) missiles. They operate autonomously by detecting a missile launch, determining if it is a threat and activating one or more transmitters which track its approach and direct a modulated beam of energy to defeat it.



ECLIPSE Sensor Head Assembly

KEY FEATURES

- Low cost
- High reliability
- Low mass – suitable for light helicopters
- Minimal air-stream intrusion
- Low inertia, two-axis servo-mechanism provides three-axis performance
- Innovative Nadir track servo control
- Strap-down Inertial Measurement Unit (IMU) for superior sightline performance
- Input aperture and fixtures included for direct coupled laser
- Ability to point both IR and EO laser sources
- Modular design with low build complexity
- Designed to be compatible with open architecture requirements, with an ability to integrate with a variety of missile warning sensors and system processors
- Baseline design configured for capability enhancements and spiral upgrades.



ECLIPSE provides IRCM protection to rotary wing platforms.

TECHNICAL SPECIFICATIONS

Mass

SHA (including BDA) – 22lbs (10kgs)

Electronics – 7lbs (3.18kgs)

Size

SHA – 11x7x9.5”

(Airflow extrusion size – 5” dia dome)

Electronics – 11x7x7”

Reliability

Mean Time Between Failure (MTBF)

>3000 hours

Laser

Direct Coupled Laser

High power IR & EO Laser compatible

Power

28V DC

Performance

Suitable for protection of small to large rotary and fixed wing platforms

Highly agile two-axis lightweight gimbals

Ability to handle short range missile shots

DESIGN PRINCIPLES

Demanding customer requirements for a low cost, low mass transmitter with high reliability has resulted in the modular ECLIPSE design. The system is split into the following sub-components:

- Sensor Head Assembly (SHA)
 - Containing the Beam Director Assembly (BDA)
- Electronics Card Set.

The SHA contains the BDA. Whilst the form factor of the BDA remains constant, we are able to adapt the design of the SHA to suit customer requirements. In its present design, the SHA has a mass of 22lbs/ 10kg, less than half that of the existing Small Laser DIRCM Transmitter.

The Electronics Card Set can either be packaged in a separate LRU or incorporated into a DIRCM system processor.

DIRCM TRANSMITTER MANUFACTURING PEDIGREE

We have delivered in excess of 1000 AN/ AAQ-24(V) DIRCM Transmitters to Northrop Grumman since Full Rate Production began in 1999. Since then, significant investment has been made into lean manufacturing techniques, supply chain management and state-of-the-art facilities; all of which have significantly increased production performance and support turn-around-times. Now established as the leading producer of combat-proven DIRCM Transmitters, we are in a unique position moving forward with ECLIPSE manufacture.



ECLIPSE configurations



Potential military helicopter wing mounted pod configuration