



## AIRBORNE PRODUCTS

# AIRBORNE COUNTERMEASURES



Lacroix is the world leader in the design, development and manufacture of advanced expendable countermeasures to defeat guided missile threats.

Backed by 40 years of unrivalled expertise, Lacroix is capable of producing any type of chaff and flare: cylindrical, square and rectangular sections.

The Engineering Department boasts over a hundred highly qualified Engineers and Technicians to design the most effective, reliable, state of the art, safe and expendable countermeasure cartridges.

Our know how combined with strict compliance to ISO 9001 V2008 and ISO 14 001 guarantees the following to customers of Lacroix:

- combat proven, top quality, reliable products;
- protection of airborne platforms with a high level of effectiveness;

In addition, Lacroix offers extensive product support from the first stage of the customers requirements and through the whole life cycle of the expendable countermeasures.

Lacroix provides training to customers for the use of countermeasures: optimal tactical and operational use as well as conditions for handling, logistics and disposal to ensure maximum safety.

## AIRBORNE PLATFORMS

- **Helicopters:** Lynx, Puma, Super Puma, Cougar, EC725-Caracal, CH47 Chinook, Tigre, NH90, MI-8, MI-17, AH64 - Apache, A109, B412, Sea King, EH101 ...
- **Transport A/C:** C 130, C160, EMB 145 - EW, CASA C 295 - CN 235, Falcon Vip, ...
- **Fast Jet A/C:** Mirage, Rafale, F16, F18, Gripen, Tornado ...
- **VIP A/C:** B737, Falcon ...



**Airborne countermeasures - 1"x1" .....5**

- LIR 110-A1
- LIR 110-T1
- LIR 111-A1
- LIR 111-A2
- LIR 111-T4
- LIR 111-T6
- LIR 112
- LEM 170
- CIR-114
- LIR 211

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- LIR 120-A400M
- LIR 120-GP
- LIR 120-V0
- LIR 121-A1
- LIR 121-A400M
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- LIR 411 V1
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- LIR 684
- LEM 677 C

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- LXT 317 L
- LXT 317 IR/F

- LXT 317 N
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- MATADOR
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- Impact Markers F4 (CRI)

## **Signalling .....53**

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# AIRBORNE COUNTERMEASURES - 1"X1"



# AIRBORNE COUNTERMEASURES - 1"X1"

MTV



**STANAG 4687 COMPLIANT**

**APPLICATION: Helicopters and Transport A/C**

## LIR 110-A1

Advanced Conventional decoy for Helicopters and Transport A/C protection against IR missiles.

New architecture and process providing improved reliability and safety.

High intensity IR output ensuring a high level of protection.

### PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years

Service life .....  $\geq 1$  year

Flying hours .....  $\geq 500$  hours

Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G

EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 1"X1"

MTV



**STANAG 4687 COMPLIANT**

**APPLICATION: Helicopters and Transport A/C**

## LIR 110-T1

Advanced Conventional decoy for Helicopters and Transport A/C protection against IR missiles.

High reliability and safety.

Customized IR output ensuring a high level of protection.

### PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 100$  hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 1"X1"

SPECTRAL



**STANAG 4687 COMPLIANT**  
**APPLICATION: Helicopters and Transport A/C**

## LIR 111-A1

Advanced Spectral flare for Helicopters and Transport A/C protection against new generation IR threats.

New architecture and process providing improved reliability and safety.

High color ratio and calibrated rising time ensuring a high level of protection.

Designed to prevent the activation of missiles IR counter-countermeasures (spectral IRCCM).

## PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 500$  hours  
Blocked ejection ..... No flare ignition

## TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance



# AIRBORNE COUNTERMEASURES - 1"X1"

SPECTRAL



**STANAG 4687 COMPLIANT**  
**APPLICATION: Helicopters and Transport A/C**

## LIR 111-A2

Advanced Spectral flare for Helicopters and Transport A/C protection against new generation IR threats.

New architecture and process providing improved reliability and safety.

High color ratio and calibrated rising time ensuring a high level of protection.

Designed to prevent the activation of missiles IR counter-countermeasures (spectral IRCCM).

## PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 500$  hours  
Blocked ejection ..... No flare ignition

## TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 1"X1"

SPECTRAL



**STANAG 4687 COMPLIANT**

**APPLICATION: Large Helicopters and Transport A/C**

## LIR 111-T4

Advanced Spectral flare for Large Helicopters and Transport A/C protection against new generation IR threats.

High reliability and safety.

High color ratio and calibrated rising time ensuring a high level of protection.

Designed to prevent the activation of missiles IR counter-countermeasures (spectral IRCCM).

## PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years

Service life .....  $\geq 1$  year

Flying hours .....  $\geq 400$  h

Blocked ejection ..... No flare ignition

## TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G

EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 1"X1"

SPECTRAL



**STANAG 4687 COMPLIANT**  
**APPLICATION: Helicopters**

## LIR 111-T6

Advanced Spectral flare for Helicopters protection against new generation IR threats.

High reliability and safety.

High color ratio and calibrated rising time ensuring a high level of protection.

Designed to prevent the activation of missiles IR counter-countermeasures (spectral IRCCM).

### PERFORMANCE CHARACTERISTICS:

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 400$  hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 1"X1"

**KINEMATIC**



**STANAG 4687 COMPLIANT**  
**APPLICATION: Helicopters**

## LIR 112

Advanced Kinematic Conventional decoy for Helicopters protection against IR missiles.

High reliability and safety.

Customized IR output and trajectory ensuring a high level of protection.

Designed to prevent the activation of missiles IR counter-countermeasures (separation rate IRCCM).

Transport aircraft version : LIR 112 - C

## PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years

Service life .....  $\geq 1$  year

Flying hours .....  $\geq 400$  hours

Blocked ejection ..... No flare ignition

## TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G

EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 1"X1"

CHAFF



**STANAG 4687 COMPLIANT**  
**APPLICATION: Any platform**

## LEM 170

Chaff cartridge for any platform protection against RF threats.

High reliability and safety.

Improved blooming to ensure a high level of protection.  
Customizable chaff cuts to optimize the generated RCS (2 to 40 GHz).

### PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 500$  hours

### TRANSPORTATION / HANDLING

Hazard class ..... 1.4 S  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 1"X1"

## INERT - DUMMY - MOCK-UP



**STANAG 4687 COMPLIANT**  
**APPLICATION: Any platform**

## CIR-114

Inert, dummy and mock-up cartridges for training and system testing.

- Ground handling
- Ground cartography
- Firing simulation
- Instrumentation

## PERFORMANCE CHARACTERISTICS

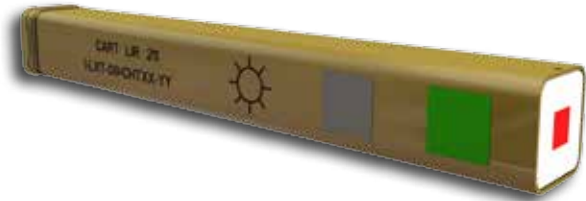
Shelf life ..... ≥ 10 years  
Service life ..... ≥ 2 years  
Flying hours ..... ≥ 400 hours

## TRANSPORTATION / HANDLING

Hazard class ..... NA

# AIRBORNE COUNTERMEASURES - 1"X1"

DUAL



**STANAG 4687 COMPLIANT**  
**APPLICATION: Helicopters**

## LIR 211

Advanced Dual flare (MTV + spectral) for Helicopters protection against new generation IR threats.

High reliability and safety.

High color ratio, calibrated rising time and optimized preset sequence ensuring the highest level of protection.

Designed to prevent the activation of missiles IR counter-countermeasures (spectral IRCCM).

## PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 400$  hours  
Blocked ejection ..... No flare ignition

## TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance





# AIRBORNE COUNTERMEASURES - 2''X1''



# AIRBORNE COUNTERMEASURES - 2"X1"

MTV



**STANAG 4687 COMPLIANT**  
**APPLICATION: Fighter and large Transport A/C**

## LIR 120-A1

Advanced Conventional decoy for Fighter and large Transport A/C protection against IR missiles.

New architecture and process providing improved reliability and safety.

High intensity IR output ensuring a high level of protection.

### PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 500$  hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 2"X1"

MTV



**STANAG 4687 COMPLIANT**  
**APPLICATION: Specially designed for A400M**

## LIR 120-A400M

Advanced Conventional decoy for Large Transport A/C protection against IR missiles.

New architecture and process providing improved reliability and safety.

High intensity IR output and optimized burning time ensuring a high level of protection.

### PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 1000$  hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 2"X1"

MTV



**STANAG 4687 COMPLIANT**  
**APPLICATION: Large Transport A/C**

## LIR 120-GP

Advanced Conventional decoy for Large Transport A/C protection against IR missiles.

High reliability and safety.

Customized IR output and burning time ensuring a high level of protection.

### PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 800$  hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 2"X1"

MTV



**STANAG 4687 COMPLIANT**  
**APPLICATION: Fighter A/C**

## LIR 120-V0

Advanced Conventional decoy for Fighter A/C protection against IR missiles.

High reliability and safety.

Customized IR output and burning time ensuring a high level of protection.

### PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 8$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 400$  hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 2"X1"

SPECTRAL



**STANAG 4687 COMPLIANT**

**APPLICATION: Fighter and large Transport A/C**

## LIR 121-A1

Advanced Spectral flare for Fighter and Large Transport A/C protection against new generation IR threats.

New architecture and process providing improved reliability and safety.

High color ratio, calibrated rising time and optimized burning time ensuring a high level of protection.

Designed to prevent the activation of missiles IR counter-countermeasures (spectral IRCCM).

### PERFORMANCE CHARACTERISTICS

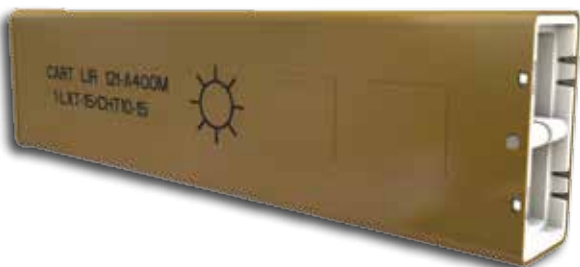
Shelf life .....	≥ 10 years
Service life .....	≥ 1 year
Flying hours .....	≥ 500 hours
Blocked ejection .....	No flare ignition

### TRANSPORTATION / HANDLING

Hazard class .....	1.3 G
EEC directive 76-769 compliance	

# AIRBORNE COUNTERMEASURES - 2"X1"

SPECTRAL



**STANAG 4687 COMPLIANT**  
**APPLICATION: Specially designed for A400M**

## LIR 121-A400M

Advanced Spectral flare for Large Transport A/C protection against new generation IR threats.

New architecture and process providing improved reliability and safety.

High color ratio, calibrated rising time and optimized burning time ensuring a high level of protection.

Designed to prevent the activation of missiles IR counter-countermeasures (spectral IRCCM).

### PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 1000$  hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 2"X1"

SPECTRAL



**STANAG 4687 COMPLIANT**  
**APPLICATION: Large Transport A/C**

## LIR 121-GP

Advanced Spectral flare for Large Transport A/C protection against new generation IR threats.

High reliability and safety.

High color ratio, calibrated rising time and optimized burning time ensuring a high level of protection..

Designed to prevent the activation of missiles IR counter-countermeasures (spectral IRCCM).

## PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 800$  hours  
Blocked ejection ..... No flare ignition

## TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance



# AIRBORNE COUNTERMEASURES - 2"X1"

SPECTRAL



**STANAG 4687 COMPLIANT**  
**APPLICATION: Fighter A/C**

## LIR 121-T5

Advanced Spectral flare for Fighter A/C protection against new generation IR threats.

High reliability and safety.

High color ratio, calibrated rising time and optimized burning time ensuring a high level of protection.

Designed to prevent the activation of missiles IR counter-countermeasures (spectral IRCCM).

### PERFORMANCE CHARACTERISTICS:

Shelf life .....  $\geq 9$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 300$  hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 2"X1"

## INERT - DUMMY - MOCK-UP



**STANAG 4687 COMPLIANT**  
**APPLICATION: Any platform**

## CIR-124

Inert, dummy and mock-up cartridges for training and system testing.

- Ground handling
- Ground cartography
- Firing simulation
- Instrumentation

### PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 2$  years  
Flying hours .....  $\geq 400$  hours

### TRANSPORTATION / HANDLING

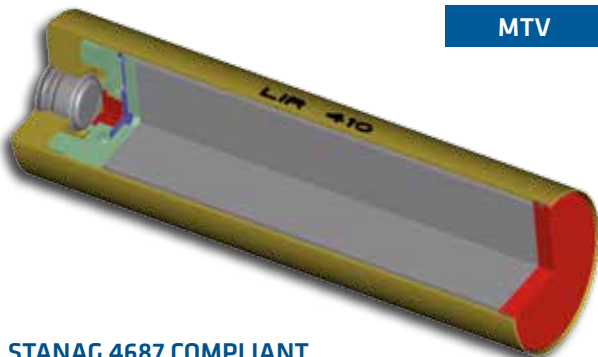
Hazard class ..... NA

**AIRBORNE COUNTERMEASURES  
40 MM/60 MM**



# AIRBORNE COUNTERMEASURES - 40 MM

MTV



**STANAG 4687 COMPLIANT**  
**APPLICATION: M2000 - Rafale**

## LIR 410

Advanced Conventional decoy for Fighter A/C protection against IR missiles.

New architecture and process providing improved reliability and safety.

High intensity IR output, calibrated rising time and optimized burning time ensuring a high level of protection.

### PERFORMANCE CHARACTERISTICS

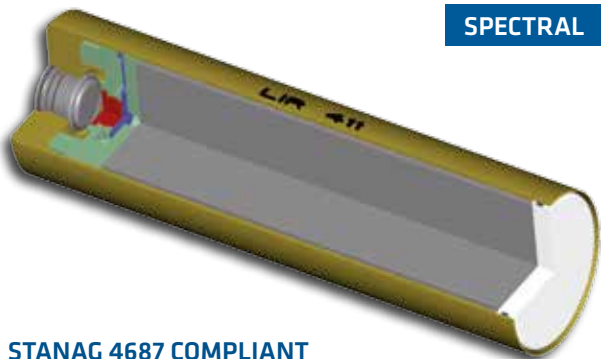
Shelf life ..... ≥ 8 years  
Service life ..... ≥ 1 year  
Flying hours ..... ≥ 300 hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 40 MM

SPECTRAL



**STANAG 4687 COMPLIANT**  
**APPLICATION: M2000 - Rafale**

## LIR 411 V1

Advanced Spectral flare for Fighter A/C protection against new generation IR threats.

New architecture and process providing improved reliability and safety.

High color ratio, calibrated rising time and optimized burning time ensuring a high level of protection.

Designed to prevent the activation of missiles IR counter-countermeasures (spectral IRCCM).

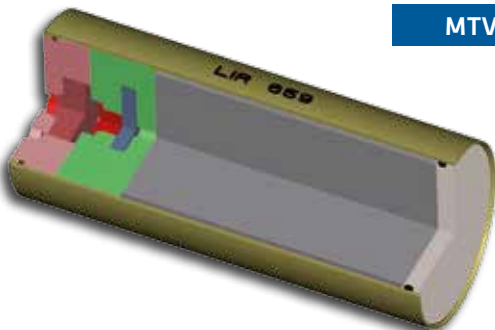
## PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 8$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 300$  hours  
Blocked ejection ..... No flare ignition

## TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 60 MM



**STANAG 4687 COMPLIANT**  
**APPLICATION: M2000 - Rafale**

## LIR 659 C

Advanced Conventional decoy for Fighter A/C protection against IR missiles.

High reliability and safety.

High intensity IR output, calibrated rising time and optimized burning time ensuring a high level of protection.

### PERFORMANCE CHARACTERISTICS

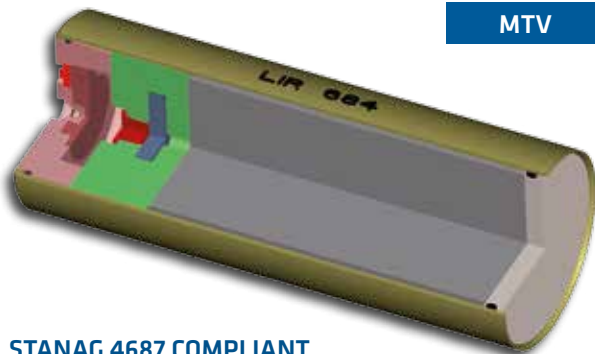
Shelf life .....  $\geq 5$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 100$  hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 60 MM

MTV



**STANAG 4687 COMPLIANT**  
**APPLICATION: M2000 - Rafale**

## LIR 684

Advanced Conventional decoy for Fighter A/C protection against IR missiles.

High reliability and safety.

High intensity IR output, calibrated rising time and optimized burning time ensuring a high level of protection.

### PERFORMANCE CHARACTERISTICS

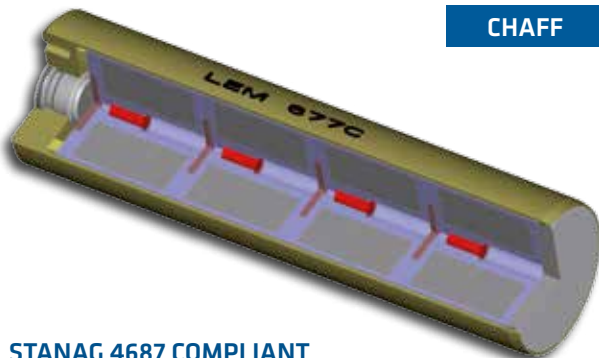
Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 100$  hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.3 G  
EEC directive 76-769 compliance

# AIRBORNE COUNTERMEASURES - 40 MM

CHAFF



STANAG 4687 COMPLIANT  
APPLICATION: M2000 - Rafale

## LEM 677 C

Chaff cartridge for Fighter A/C protection against RF threats.  
High reliability and safety.  
Improved blooming to ensure a high level of protection.  
Customizable chaff cuts to optimize the generated RCS  
(2 to 40 GHz).

### PERFORMANCE CHARACTERISTICS

Shelf life .....  $\geq 10$  years  
Service life .....  $\geq 1$  year  
Flying hours .....  $\geq 100$  hours  
Blocked ejection ..... No flare ignition

### TRANSPORTATION / HANDLING

Hazard class ..... 1.4 S  
EEC directive 76-769 compliance

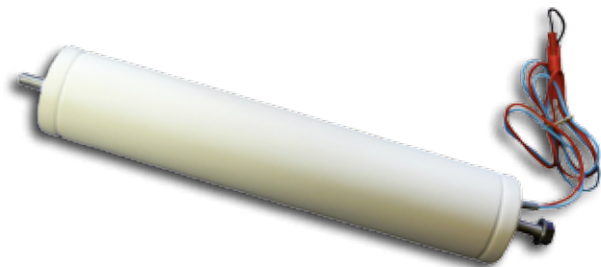


# TRAINING



# TRACKING FLARE

IR



**APPLICATION:** Towed target or UAV

## LXT 317 A

### PHYSICAL CHARACTERISTICS

External diameter.....	50 mm
Length .....	260 mm
Weight.....	1150 g
Material body.....	Steel

### PERFORMANCE CHARACTERISTICS

Output.....	≥ 950 W/sr
Effective minimum duration .....	35 sec
Total duration.....	50 sec
Spectral range.....	3 to 5μm
Shelf life .....	≥ 5 years

### TRANSPORTATION / HANDLING

Hazard class .....	1.4 G
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# TRACKING FLARE

IR



**APPLICATION:** Towed target or UAV

## LXT 317 B

### PHYSICAL CHARACTERISTICS

External diameter.....	50 mm
Length .....	200 mm
Weight.....	850 g
Material body.....	Steel

### PERFORMANCE CHARACTERISTICS

Output.....	$\geq 720$ W/sr
Effective minimum duration .....	35 sec
Total duration.....	50 sec
Spectral range.....	3 to $5\mu\text{m}$
Shelf life .....	$\geq 5$ years

### TRANSPORTATION / HANDLING

Hazard class .....	1.4 G
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# TRACKING FLARE

IR



**APPLICATION:** Towed target or UAV

## LXT 317 C

### PHYSICAL CHARACTERISTICS

External diameter.....	50 mm
Length .....	160 mm
Weight.....	650 g
Material body.....	Steel

### PERFORMANCE CHARACTERISTICS

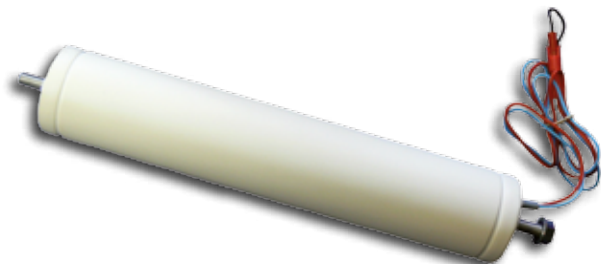
Output.....	$\geq 540$ W/sr
Effective minimum duration .....	35 sec
Total duration.....	50 sec
Spectral range.....	3 to $5\mu\text{m}$
Shelf life .....	$\geq 5$ years

### TRANSPORTATION / HANDLING

Hazard class .....	1.4 G
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# TRACKING FLARE

VISUAL



**APPLICATION:** Towed target or UAV

## LXT 317 L

### PHYSICAL CHARACTERISTICS

External diameter.....	50 mm
Length .....	260 mm
Weight.....	1180 g
Material body.....	Steel

### PERFORMANCE CHARACTERISTICS

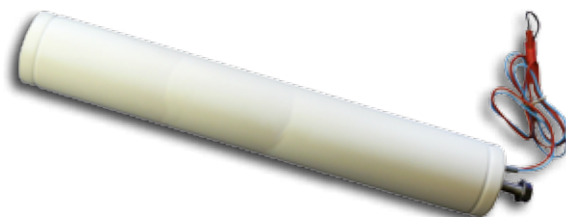
Output.....	≥ 20.000 cd (red visual light)
Effective minimum duration .....	≥ 35 sec
Total duration .....	≥ 60 sec
Shelf life .....	≥ 5 years

### TRANSPORTATION / HANDLING

Hazard class .....	1.4 G
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# TRACKING FLARE

VISUAL/IR



**APPLICATION:** Towed target or UAV

## LXT 317 IR/F

### PHYSICAL CHARACTERISTICS

External diameter.....	50 mm
Length .....	260 mm
Weight.....	1180 g
Material body.....	Steel

### PERFORMANCE CHARACTERISTICS

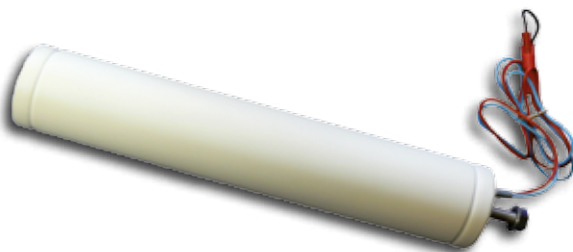
Output .....	$\geq 20.000$ cd during the first 8 sec
Output .....	$\geq 900$ W/sr (3-5 $\mu$ m) during the last 30 sec
Total duration .....	$\geq 55$ sec
Shelf life .....	$\geq 5$ years

### TRANSPORTATION / HANDLING

Hazard class .....	1.4 G
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# TRACKING FLARE

IR



**APPLICATION:** Towed target or UAV

## LXT 317 N

### PHYSICAL CHARACTERISTICS

External diameter.....50 mm  
Length ..... 315 mm  
Weight..... 1150 g  
Material body..... Aluminium

### PERFORMANCE CHARACTERISTICS

Output.....  $\geq 800$  W/sr  
Effective minimum duration ..... 70 sec  
Spectral range.....3 to 5 $\mu$ m  
Shelf life .....  $\geq 5$  years

### TRANSPORTATION / HANDLING

Hazard class ..... 1.4 G

# TRACKING FLARE



**APPLICATION:** Towed target or UAV

## LXT 317 EJ

Pyrotechnic device which ejects the tracking flare from the target/UAV.

Helps preserve the Target/UAV.

Compatible with 317A, B, C and N tracking flares.

May be enhanced with a structural device generating both. RF and laser signatures to trigger the proximity fuse of the missile.

## PHYSICAL CHARACTERISTICS

LXT 317 A EJ .....	50 mm x 340 mm - 1,580 g
LXT 317 B EJ .....	50 mm x 280 mm - 1,280 g
LXT 317 C EJ.....	50 mm x 240 mm - 1,110 g
LXT 317 L EJ.....	50 mm x 340 mm - 1,610 g

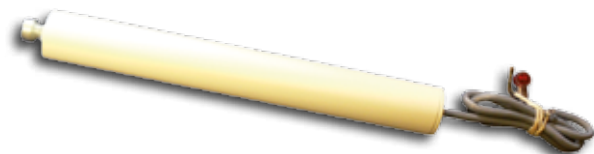
## TRANSPORTATION / HANDLING

Hazard class ..... 1.4 G



# TRACKING FLARE

IR



**APPLICATION:** Towed target or UAV

## MATADOR

### PHYSICAL CHARACTERISTICS

External diameter.....	25 mm
Length .....	205 mm
Weight.....	300 g
Material body.....	Steel

### PERFORMANCE CHARACTERISTICS

Output.....	$\geq 150$ W/sr
Total duration .....	60 sec
Effective minimum duration .....	40 sec
Spectral range.....	3 to $5\mu\text{m}$
Shelf life .....	$\geq 5$ years

### TRANSPORTATION / HANDLING

Hazard class .....	1.4 G
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# MANPAD SIMULATOR

IR/UV



## SIDEMIR

Missile departure simulator to stimulate aircrafts MWS.  
High level of credibility: IR/UV signature and trajectory.  
Pyrotechnic device generating the IR flash representative of the MANPAD ejector.

### PHYSICAL CHARACTERISTICS

External diameter.....	58 mm
Length.....	508 mm
Weight.....	1900 g
Maximum range.....	1 km

### EJECTOR:

The ejector is a pyrotechnical device which generates an IR « flash » representative of MANPADS ejector.

### FIRING LAUNCHER / BENCH

Firing launcher: The firing launcher is mounted on a mobile (towable) stand.

Elevation:.....	15 to 70 m
Azimuth orientation:.....	90°

Firing bench: Firing bench allows safe ignition of SIDEMIR simulator, thanks to a cable (max 100 m)

# PRACTICE BOMBS

HIGH DRAG



## BAVAR F3B

Ballistic representative of a wide range of high drag bombs.  
Standard NATO distance between rings of 14 ".

### PHYSICAL CHARACTERISTICS

Calibre.....	98,5 mm
Length .....	740 mm
Weight.....	3,8 kg
Tail .....	110 mm x 110 mm

### FEATURES

- Stable and reproducible trajectory
- Facility of operation (no tools required)
- Use on all types of aircraft
- No maintenance
- Handling and transport safety
- Destruction on impact without rebounds allowing use within a limited area
- Impact point marking (marker)

# PRACTICE BOMBS

LOW DRAG



## BAVAR F4D

Ballistic representative of a wide range of low drag bombs.  
Standard NATO distance between rings of 14 ''.

### PHYSICAL CHARACTERISTICS

Calibre.....	98,5 mm
Length .....	902 mm
Weight.....	16 kg
Tail.....	100 mm x 100 mm

### FEATURES

- Stable and reproducible trajectory
- Facility of operation (no tools required)
- Use on all types of aircraft
- No maintenance
- Handling and transport safety
- Destruction on impact without rebounds allowing use within a limited area
- Impact point marking (impact marker CRI F4)

# PRACTICE BOMBS



## IMPACT MARKERS F4 (CRI)

Compatible with several types of training bombs.  
Simultaneous flash and smoke effects for precise localization of the impact.

### PHYSICAL CHARACTERISTICS

Calibre..... 21,5 mm  
Length ..... 260 mm  
Weight..... 150 g

### PERFORMANCE CHARACTERISTICS

Smoke surface area ..... 1.5 m<sup>2</sup>  
Light intensity ..... 10 000 to 19 000 cd  
Effective minimum duration ..... 5 sec





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