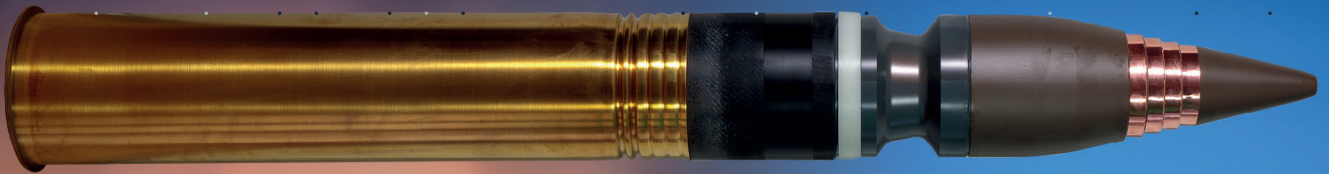


ELECTRONICS DIVISION

# VULCANO 127

127MM BALLISTIC EXTENDED RANGE (BER)  
AND GUIDED LONG RANGE (GLR)



Vulcano 127mm is a family of subcalibre ammunition for 127/54 and 127/64 Leonardo naval artillery systems composed by an unguided projectile called BER (Ballistic Extended Range) and a guided one called GLR (Guided Long Range). They represent the most advanced technology currently available for precise naval artillery firings. The Vulcano projectile is specifically conceived and realized to improve the performance of other ammunition of the same calibre, both in range and accuracy, while maintaining compatibility with the in service 127mm gun barrels. The outline of the ammunition is almost identical to that of conventional rounds, which enables it to be handled without any additional logistical burden.

The main application of the Vulcano 127 GLR is for long range, high accuracy fire support against stationary and moving point targets with extremely reduced likelihood of collateral damage and also for precise surface engagements against moving ships.

The outstanding aerodynamics, coupled with the GPS guidance and trajectory shaping capabilities, enable the Vulcano 127 GLR to reach a max range over 80km while keeping an extreme accuracy of less than 5m within all operational ranges.

The shell is filled with IM explosive and it is made up of specific patented pre formed tungsten rings, enabling an extremely high effectiveness against soft and lightly protected targets; the detonation trigger is generated by a Radio Frequency (RF) programmable fuse capable of various functionalities, such as: altimetric, instantaneous and delayed impact.

A Joint Program with

**DIEHL**  
Defence

When the RF fuse is replaced with the alternative dedicated terminal homing sensors the ammunition can also effectively engage moving naval targets in case of IR (InfraRed) sensor or, in case of SAL (Semi Active Laser), laser designated targets (forward observer required), stationary and moving, with further improved precision with respect to pure GPS guidance.

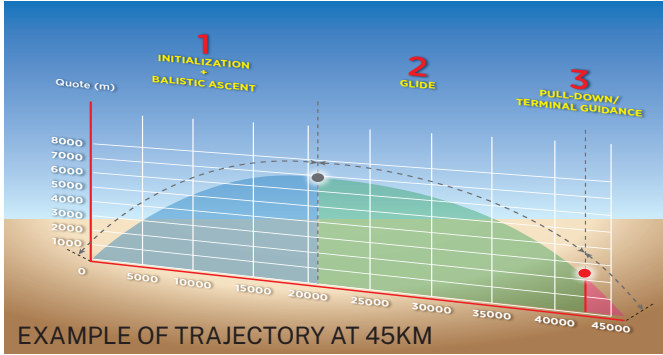
Moreover, the possibility of programming the final attack angle of the projectile to up to 90° (that is, vertical fall) against the target enables the maximization of both warhead effectiveness and guidance accuracy, as well as minimizing the likelihood of detection of projectile in flight by the enemy's defence systems.

The Vulcano 127 ammunition, both BER and GLR, have been qualified according to the relevant STANAGs under joint Italian and German MoD supervision.

 **LEONARDO**

## KEY FEATURES

- Higher range, extending the conventional 127 mm naval guns operative ranges more than to three times;
- Higher precision at any range;
- Less collateral damages;
- Minimization of engagement cost;
- Capability to nullify Target Location Error (TLE) for stationary and moving targets (with IR and SAL Seeker);
- State of the art Insensitive Munition (IM) design;



The flight sequences of the Vulcano 127mm ammunition encompass a Ballistic Flight Path (1) involving initialization and GPS acquisition, a Glide Path (2) with Mid-Course Navigation and Terminal Guidance (3) with GPS or IR or SAL mode, depending on the configuration.



Vulcano 127  
GLR packaging

Height of Burst  
Sensor  
GPS only

Vulcano 127  
ammunitions

## TECHNICAL SPECIFICATIONS

### BALLISTIC EXTENDED RANGE (BER)

127/64 cal range up to 60 km

Multifunctional Fuze

Altimetry

Impact/Delayed impact

Time

Notched HE warhead

Ballistic accuracy

### GUIDED LONG RANGE (GLR)

127/64 cal range over 80 km

Autonomous IMU + GPS guidance;

CEP ≤ 5m on coordinate at any operative range;

SAL terminal homing with CEP ≤ 3m on target at any operative range;

IR terminal guidance;

Precise bombardment firing;

Notched HE warhead.

### PROGRAMMING AND FIRE COMMAND VULCANO 127 GLR INTEGRATED ON THE SHIP PLATFORM

Fire Command Computer

GPS Key Storage interface device (GPS-KID)

GPS-Receiver

Programming Device

#### For more information:

infomarketing@leonardo.com

#### Electronics Division

Via Valdicocchi 15

19136 La Spezia-Italy

T +39 0187 5811

F +39 0586 854060



leonardo.com

This publication is issued to provide outline information only and is supplied without liability for errors or omissions.

No part of it may be reproduced or used unless authorised in writing.

We reserve the right to modify or revise all or part of this document without notice.

2022 © Leonardo S.p.A.

MF00003 06-22

