



# PROVEN **SOFTKILL**

**MASS™ – MULTI AMMUNITION SOFTKILL SYSTEM**  
MULTISPECTRAL NAVAL PROTECTION

PASSION FOR **TECHNOLOGY.**

 **RHEINMETALL**



## MASS SYSTEM

The Multi Ammunition Softkill System MASS represents an innovative departure in naval electronic warfare. The state-of-the-art system is specifically designed for blue water and littoral operations where systems with quick reaction times are particularly critical. Having proven high effectiveness in various international trials, MASS is ideally suited to meet the changing requirements of modern navies with global responsibilities.

The fully computerized and trainable countermeasure system protects ships from attacks by modern, sensor-guided anti-ship missiles at high seas and in coastal areas as well as from asymmetric, terrorist-type threats. Furthermore, MASS offers significant tactical, operational and logistical advantages. It can be installed on any type of ship, and operates either in stand-alone mode or as an integral part of the ship's networked C4I and weapon engagement systems. Programmable and multispectral, the innovative MASS\_OmniTrap ammunition provides protection in all relevant wavelengths of the electromagnetic spectrum (radar, infrared, laser, electro-optic and ultraviolet).



## MAIN FEATURES

- Turnkey solution offering multispectral protection
- Fully computerized and trainable launcher with pitch-and-roll compensation
- Easy installation on all ship types due to stealth design, small dimensions, small weight



## STATUS

- Since the market launch in 2002, Rheinmetall Defence has booked orders for MASS from the navies of many NATO and non-NATO countries for different ship classes, ranging in size from patrol boats to corvettes and frigates
- MASS is already in service in combat environments
- Proven track record

## OPTIONAL

- MASS\_ISS with integrated sensor suite, featuring built-in sensors to detect radar, laser and electro-optical threats
- MASS\_ATD with Anti-torpedo decoy capability
- MASS\_OmniTrap mmW
- MASS\_OCR with distraction and seduction capability
- MASS\_DUERAS with distraction capability

## MASS STANDARD SYSTEM CONFIGURATION

The configuration is modular and consists of:

- 1–6 trainable launchers
- 1 control unit for each launcher
- 32 multispectral rounds per launcher
- Data interface (Ethernet/RS422 or other standard)

## COMPLETE MISSILE DEFENCE

Blue water warfare	Decoy mode
Littoral warfare	Screening mode
Asymmetric threat	Screening mode

## TECHNICAL DATA

Number of ammunitions	32 per launcher
Stabilization	Pitch-and-roll compensation
Bearing velocity	100°/s (2-axis)
Bearing acceleration	360°/s <sup>2</sup> (2-axis)
Launcher weight	342 kg
Launcher height	1.1 m
Sweeping radius	1.3 m



## OPTIONAL SYSTEM CONFIGURATION

### MASS\_ISS with integrated sensor suite

MASS\_ISS is a highly integrated multispectral protection suite that provides surface ships with an extremely effective, fully automated defensive aids suite. Jointly developed by Rheinmetall and Saab Grintek Defence, this version of MASS comes with sensors capable of detecting both radar and laser threats: the SME-150 and Naval Laser Warner System (NLWS).

The sensor suite can be expanded by including other sensors, such as active radar missile warners, Rheinmetall's electro-optical sensor system "Multi Sensor Platform – MSP600" or the fast infrared search and track reconnaissance sensor "FIRST".

## TECHNICAL DATA – MASS\_ISS

### NLWS

Wavelength	0.53 μm – 1.7 μm
Probability of Intercept (POI)	
on multi pulse sources	99%
on single pulse sources	95%
Threat detection, classification and identification*	
Bearing accuracy	5 degrees RMS

### SME 150

Frequency	2 GHz – 18 GHz, optional up to 40 GHz
Bearing accuracy	3.5 degrees RMS (2 GHz – 18 GHz)
Integrated radar and laser threat library	
Integrated radar and laser ESM HMI	

\*Identification with the aid of threat library



## OPTIONAL SYSTEM CONFIGURATION

### MASS\_ATD with Anti-torpedo decoy capability

MASS\_ATD offers the possibility to combine MASS with underwater warfare capability. All standard MASS system configurations can be upgraded with the Anti-torpedo decoy kit. The kit is designed for 130 mm NATO standard Anti-torpedo decoy rounds.

#### TECHNICAL DATA – MASS\_ATD

Number of launching tubes	1–4 per launcher
Calibre	130 mm
Size (W x D x H)	872 mm x 220 mm x 698 mm
Weight	30 kg per tube



## STANDARD AMMUNITION

### MASS\_OmniTrap ER MK2 – Improved performance

MASS\_OmniTrap ER is the new generation with extended range and improved flight trajectory for precise decoy deployment against most modern imaging radar and infrared guided threats.

## TECHNICAL DATA – MASS\_OMNITRAP ER

### Multispectral ammunition

Calibre	81 mm x 360 mm
Ultraviolet	Solar blind, 0.3 $\mu\text{m}$ – 0.4 $\mu\text{m}$
Electro-optical	0.4 $\mu\text{m}$ – 1.1 $\mu\text{m}$
Laser	0.4 $\mu\text{m}$ – 1.5 $\mu\text{m}$ , 10.6 $\mu\text{m}$
Infrared (IR)	2 $\mu\text{m}$ – 14 $\mu\text{m}$ (two colour)
Radar	I, J, and Ka band
Range	10 m – 400 m
Hazard classification	1.3G



## OPTIONAL AMMUNITION

### MASS\_OCR with distraction and seduction capability

- 118 mm Offboard Corner Reflector rocket
- Ship-like radar characteristics
- Persistence >60s
- Colocated and coordinated chaff and OCR possible
- Can be integrated into any existing MASS configuration
- Existing systems can easily be upgraded

### TECHNICAL DATA – MASS\_OCR

Overall length of round	1,550 mm
Calibre	118 mm
Total weight	~15 kg
Radar	I, J, and Ka band
Range	50 m to 400 m
Up to four MASS_OCR per launcher	
Hazard classification	1.2C



### MASS\_DUERAS with distraction capability

- 82 mm distraction rocket
- Can be integrated into any existing MASS configuration
- Existing systems can easily be upgraded

### TECHNICAL DATA – MASS\_DUERAS

Overall length of round	807 mm
Calibre	82 mm
Total weight	~9.2 kg
Radar	8 GHz – 18 GHz
Range	100 m to 2000 m
Up to four MASS_DUERAS per launcher	
Hazard classification	1.2E



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