

MoST-5 / MoST-10 Modular Tactical Shooting Range MoST-2 Container Shooting Range MoST-1 Mobile Container Shooting Range MoST-SH Modular Shoot House Mobile Bullet Traps



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### SHOOTING RANGE USES

**Modular Tactical Shooting Range MoST** is indoor shooting range for a variety of training types for uniformed services as well as for private uses. They are made of steel modules which can be transported to any suitable location having a flat, paved surface and then assembled. A MoST system does not require fixing to the ground.

The time of building the shooting range is between 180 and 360 days, depending on the MoST size.

Each MoST system is designed for:

- firing live ammunition with a maximum bullet energy of 3600 J;
- fixed or moving firing lanes;
- shooting practice, tactical shooting, sports shooting, and leisure shooting;
- burst fire with automatic firearms;
- firing scenarios, including targert retrieval system, strobe lights, artificial fog, and sound effects;
- shoot houses and 180° firing sectors with mobile bullet traps;
- disassembly and relocation, or modification of the firing lane length at any time;
- ventilation to guarantee the highest air quality during firing, including reduction of lead concentrations below the limit;
- air conditioning to ensure comfort in all seasons;
- environmental protection by preventing the release of combustion dust and by maintaining low noise emissions.

MoST-5 and MoST-10 systems have Certificates of Compliance issued by the Military Institute of Armament Technology in Zielonka, Poland.

# SHOOTING RANGE SIZES

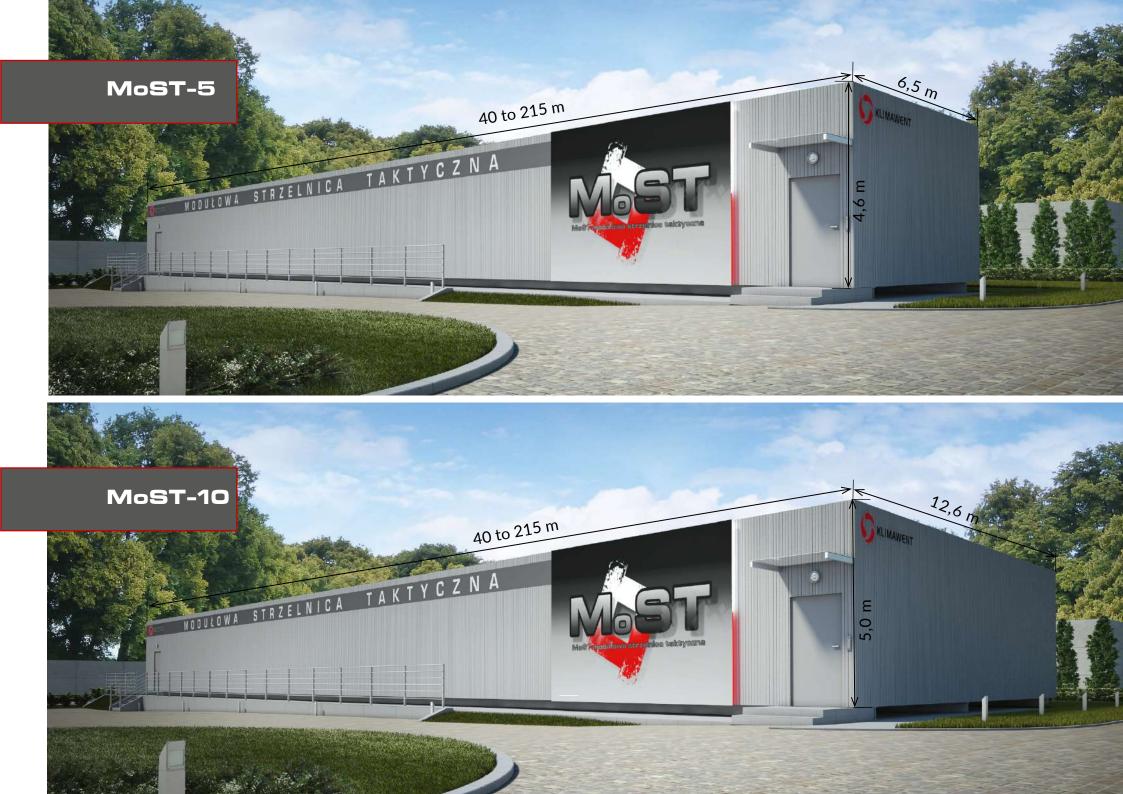
Each MoST system consists of steel modules, measuring inside 2.5 m height and 5 m width (MoST-5) or 3 m height and 10 m width (MoST-10). When assembled, the modules form an integrated facility capable of supporting various shooting range functions.

MoST systems are available in eight sizes, varying by firing lane width and length:

- 1. MoST-5 5 m lane width, either 25, 50, 100 or 200 m long
- 2. MoST-10 10 m lane width, either 25, 50, 100 or 200 m long

The modular design of the MoST system allows the range length to be modified, by the addition or removal of the modules. Each MoST range can also be disassembled and relocated at any time. The standard width of each module is 2.5 m, and the total range length can be changed by adding or removing individual modules.





# SHOOTING RANGE STRUCTURE

Each MoST shooting range consists of the following modules:

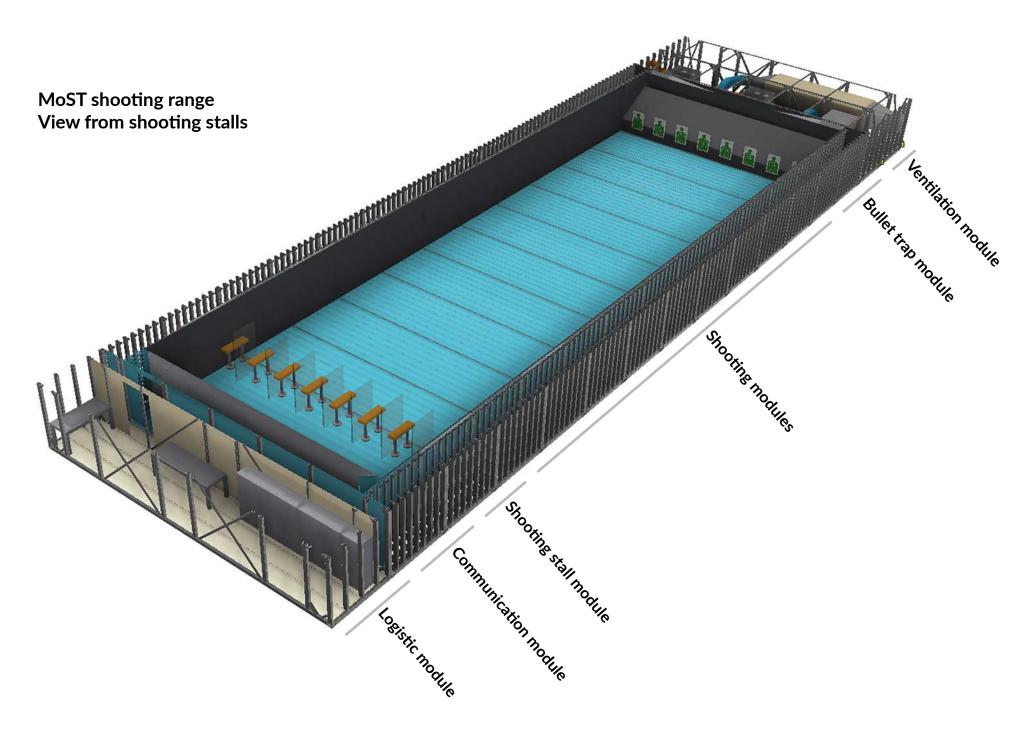
- Logistic module
- Communication module
- Shooting stall module
- Shooting modules
- Ventilation module
- Bullet trap module

All modules exposed to live fire are designed as welded frames, combined with sufficiently strong, hard-resistant steel able to resist piercing. The modules are delivered separately to the installation site, where they are assembled on a level and hard-paved surface. With the modules assembled into the integrated facility, the side walls and the ceiling surface are lined with façade panels to ensure sufficient thermal and noise insulation performance. The MoST is ready for operation once connected to an electrical power source and furnished with the required fixtures.

### Logistic module

This is the fire control room with the range master's control workstation, including a display unit for viewing the CCTV feeds from the firing lanes, and controls for operating ventilation, lights, sound and other equipment. The logistic module features an external door, and a bulletproof door internal leading to the communication module. The logistic module configuration is customizable, and may be expanded to include a medical station, a briefing room, a locker room, etc.





### **Communication module**

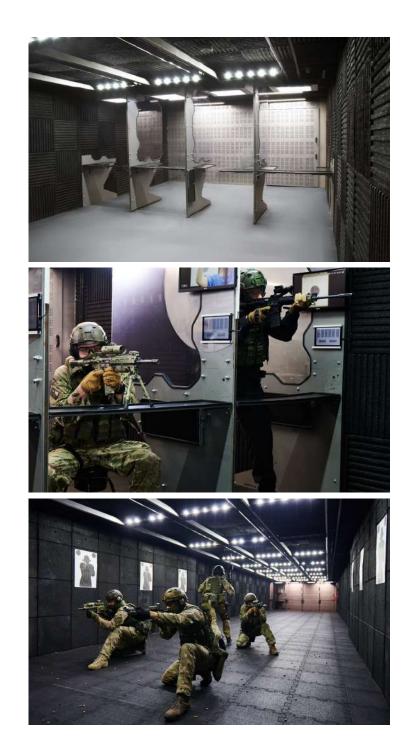
This module provides a passageway between the logistic module(s) and the shooting stand module. The communication module in equipped in Air Wall expansion chamber, which supplies fresh air to the shooting range.

### Shooting stall module

This module houses the shooting posts, each separated by removable partition walls. Each shooting stand has an overhead lamp and CCTV IP cameras. A target carrier control panel can be installed in each shooting post.

### Shooting modules

The 2.5 m long shooting modules are combined to form the firing lane zone, for firing lanes of 25, 50, 100 or 200 m. Mobile bullet traps can be supplied and installed in the firing lane zone to create a 180° firing sector.



### Ventilation module

The module is equipped in air handling unit and ventilation filter units, efficiency of 99.9%. Aside from its unique air filtration system it is also the heat recovery system. This significantly improves the energy efficiency of the electric air heating in winter and air conditioning in summer. The automatic controls of the ventilation system maintain steady indoor air parameters and comfort in all seasons.



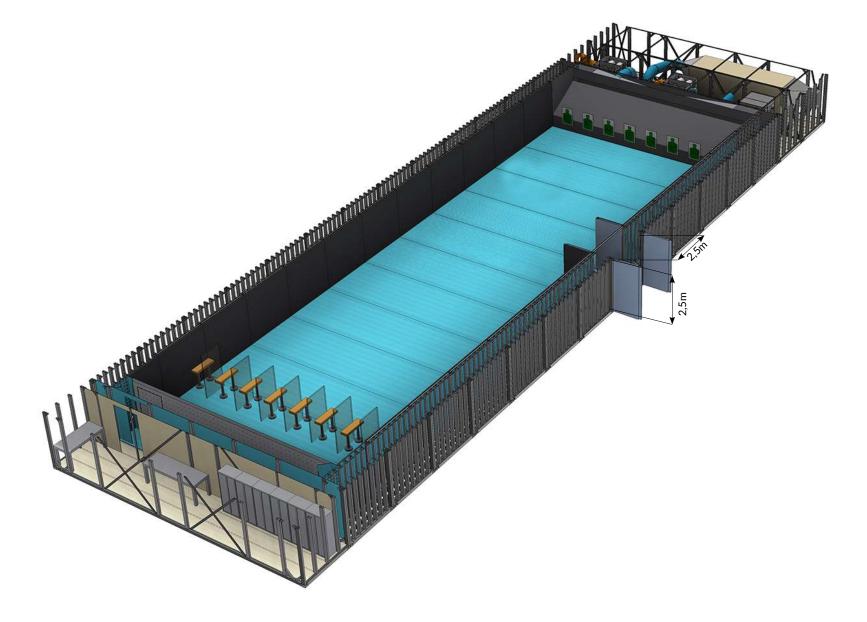


### **Bullet trap module**

This module is equipped with a granular rubber bullet trap. The module is lined on the inside with rubber anti-ricochet panels. The granular rubber allows for about 100,000 rounds on each shooting axis. After periodic cleaning the granular rubber is suitable for reuse.

# CAR MODULE

An optional version of the shooting module, available on request. This features a garage-style door through which vehicles or other large objects can be moved in and out of the lane zone.



# **BALLISTIC FEATURES**

The ballistic features comprise:

- Main bullet trap
- Anti-ricochet panels
- An optional target retrieval system (with target carriers, turntables and lifts)
- Tactical lamps
- Audio system
- CCTV system

### Most operating features:

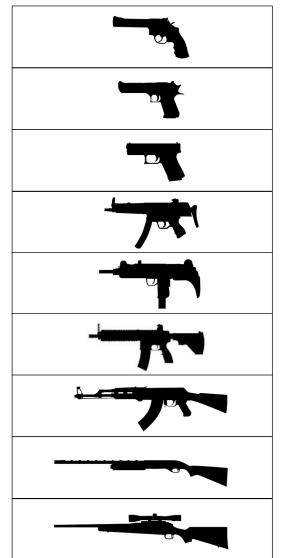
- firing on fixed and moving lanes
- 16° ricochet angle for the maximum safety of the users
- full containment of fired projectiles
- long service life of the bullet traps
- firing live ammunition with a maximum bullet energy of 3600 J;

### Target retrieval system:

Target carrier:

- projectile hardened
- stepless speed control
- management with PC workstations, tablets, laptop computers, hard-wired control panels, touch screen displays, etc.
- programmable and highly accurate target positioning
- high-quality components for low-noise and reliable operation

### MoST-supported firearm types



Turntable:

- projectile hardened
- stepless speed and 360° rotation
- optional tilt arm for targets behind covers
- can be integrated with target carrier systems and target lifts

### **Tactical** lamps

The tactical lamps comprise a system of LED RGB lamp fixtures (providing white and coloured light) installed within the lanes to illuminate the firing zone and the targets.

The LED lamp fixtures with ballistic shielding feature:

- resistance to projectile fire
- management by PC workstations, tablets, laptop computers, hard-wired control panels, touch screen displays, etc.
- stepless brightness adjustment
- strobe mode
- lamp group control

### Audio system

The integrated and fully programmable audio system can output any sound required by the fire scenario.

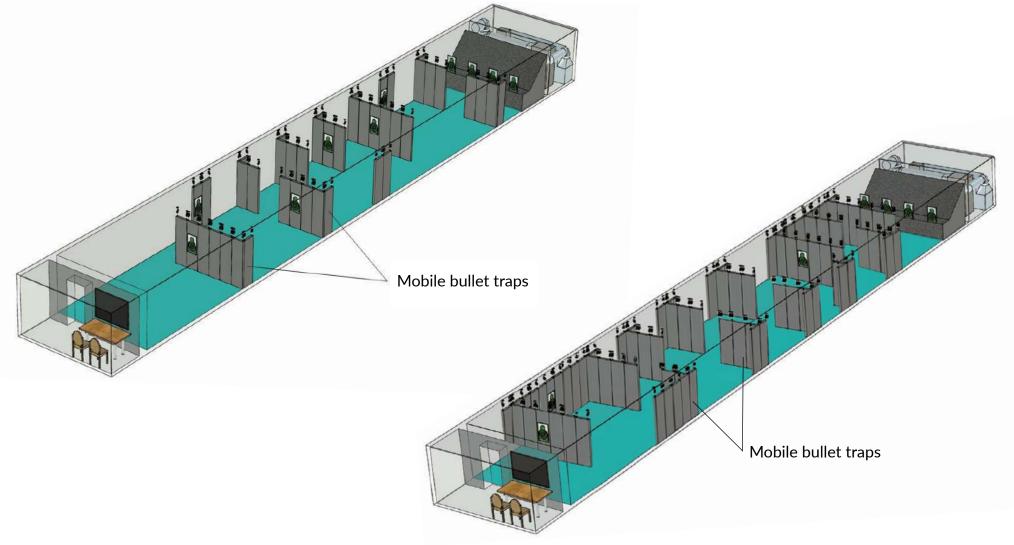
### **CCTV** system

The CCTV system features:

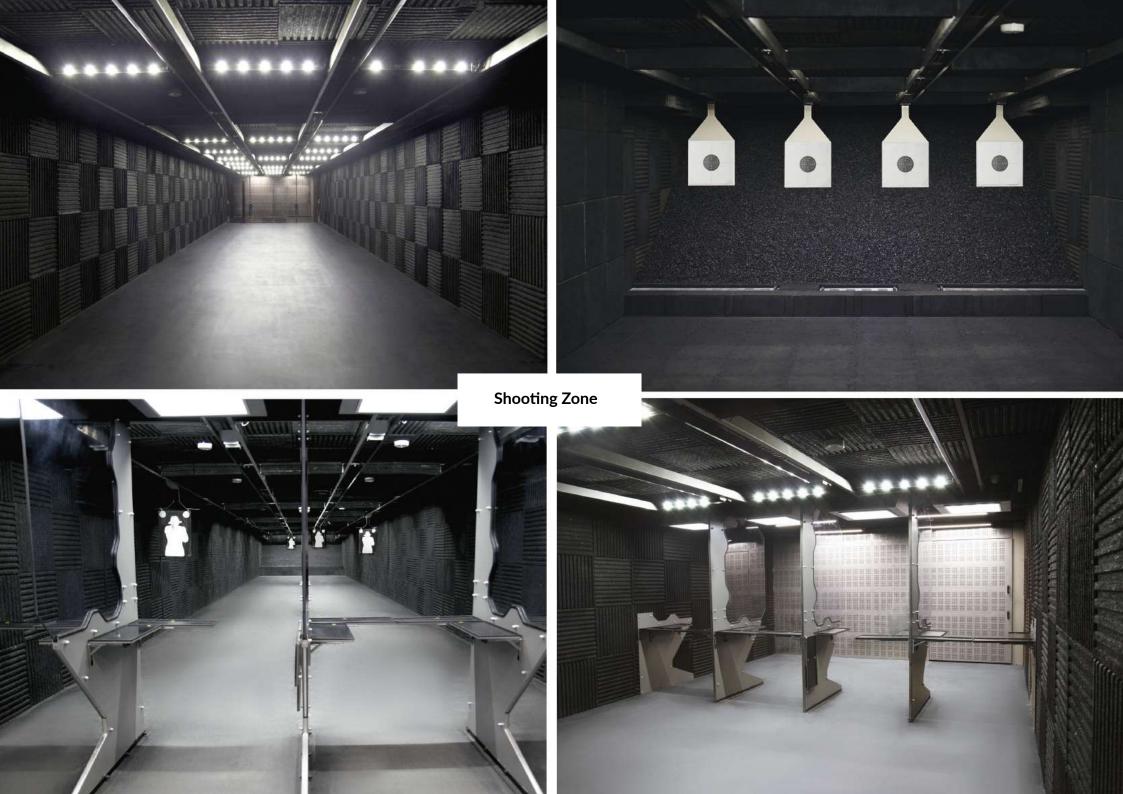
- visual monitoring of each shooting stand during use
- video recording and playback
- integration of visual cameras for projectile hit location determination

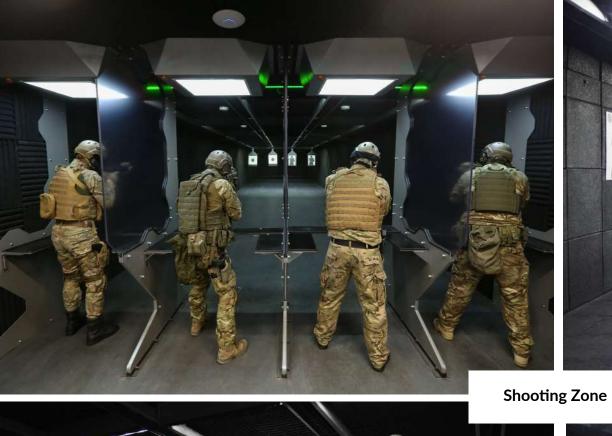
### MOBILE BULLET TRAPS WITH "SHOOT HOUSE" OPTION

The optional mobile bullet traps can be delivered in any configuration in the firing zone to create shoot houses for tactical live-fire training. See the configuration shown below.

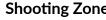


	A. Mo	ST TECHNICAL S	PECIFICATION	S PER SIZE					
		MoST-5			MoST-10				
ltem	Designation	25	50	100	200	25	50	100	200
	Firing zone size:								
1	width [m]	5	5	5	5	10	10	10	10
T	length [m]	25	50	100	200	25	50	100	200
	min. height [m]	2.4	2.4	2.4	2.4	2.4	2.4	2,4	2,4
	Shooting range external dimensions:								
2	width [m]	6.5	6.5	6,5	6,5	12.6	12.6	12,6	12,6
2	length [m]	40	65	115	215	40	65	115	215
	height [m]	4.4	4.4	4.4	4.4	4.6	4.6	4,6	4,6
3	Peak power [kW]	94	95	120	160	177	179	215	283
4	Shooting range overall weight [t]	140	225	395	734	273	437	766	1425
		B. BALLISTIC	SPECIFICATION	١S					
	Firing zone outer partition structure:	Notes   bulk bullet trap   Steel panels, anti-ricochet panel hardly flammable							
1	main bullet trap								
	side walls & ceiling								
	floor	Steel panels, rubber panels							
2	Safe limit angle (ricochet angle)	16°							
3	Supported firearm and ammunition types	- pneumatic weapons, 4.5 mm (shot) - rimfire pistols and rifles, e.g. 5.6 mm - centerfire pistols and revolvers, e.g. 7.62 mm, 9.65 mm, 11.43 mm - smoothbore shotguns, e.g. 12 gauge - rifles and carbines, e.g. 7.62 mm NATO (not supported: armour-piercing, tracer and incendiary rounds)							
4	Automatic firearm support and limitations	Short-burst fire (up to 5 rounds)							
5	Bulk bullet trap cleaning / emptying intervals	MoST-5 MoST-10 400k rounds 800k rounds							
		C.	HVAC						
1	Filter separation efficiency of indoor and exhaust air	99.9%							
2	Air treatment	winter heating, summer cooling, heat recovery							
	D. N	IOISE, LIGHT, AN	ND CCTV MONI	TORING					
1	Outdoor sound pressure level, measured 5 m from the shooting range	55 dB(A)							
2	Light types	main lights, tactical lights, and emergency lights							
3	CCTV monitoring	Each shooting stand is visually monitored with CCTV IP cameras + video feed recording							

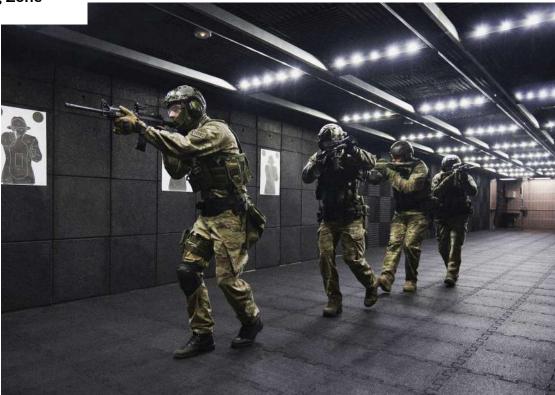










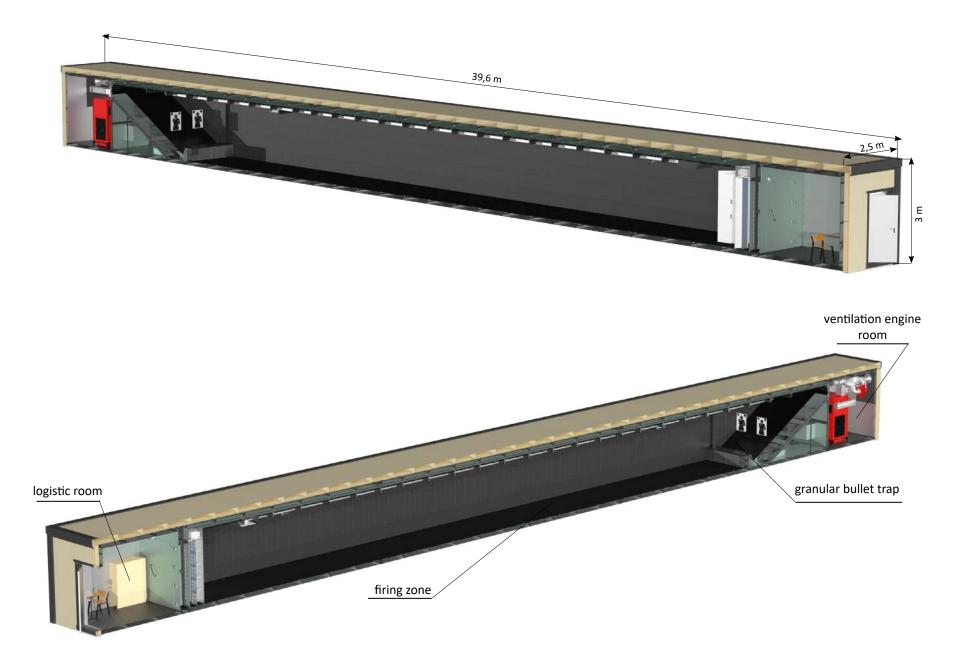


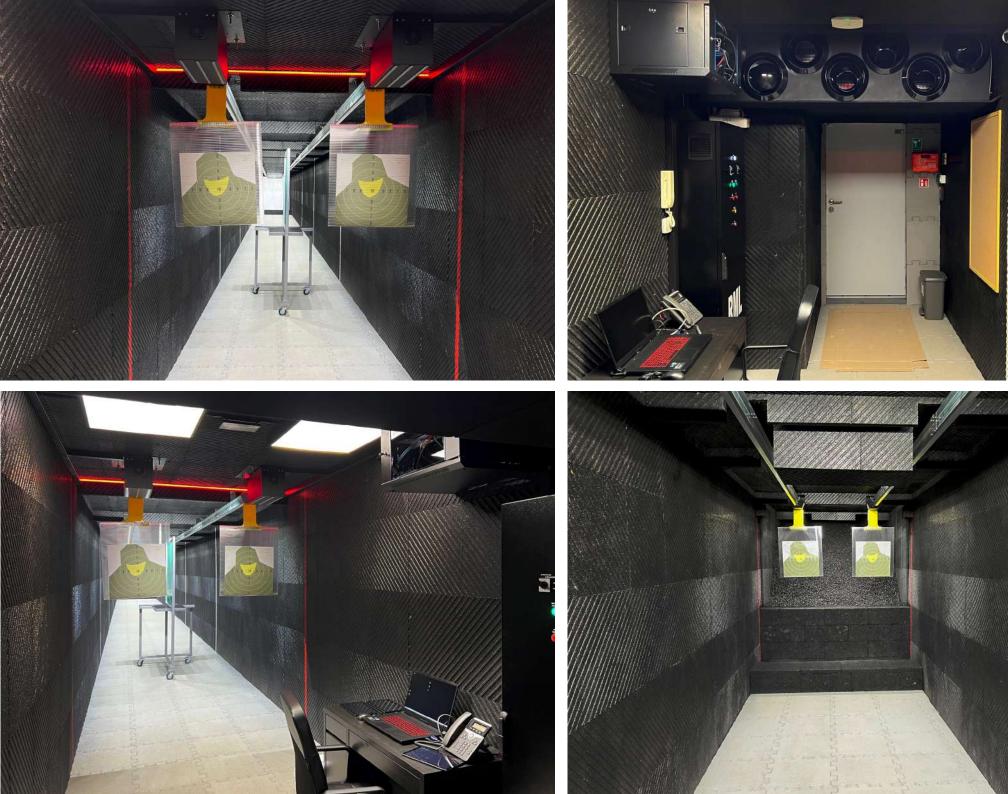


### **MOST-2 CONTAINER SHOOTING RANGE**

### MoST-2 Container Shooting Range

- can be used as training facility for uniformed services and as commercial facility;
- is indoor shooting range;
- has 25m shooting line;
- has two shooting stalls;
- is equipped with tactical lighting system, target retrieval system and CCTV;
- is equipped with granular bullet trap;
- provides possibility of using ammunition of 3600 J maximum initial energy of the bullet, including weapons listed below:
  - » pneumatic weapons, 4.5 mm (shot),
  - » rimfire pistols and rifles, e.g. 5.6 mm,
  - » centerfire pistols and rifles, e.g. 7.62 mm, 9.65 mm, 11.43 mm,
  - » smoothbore shotguns, e.g. 12 gauge,
  - » rifles and carbines, e.g. 7.62 mm NATO (not supported: armour-piercing, tracer and incendiary rounds);
- allows trainings from fixed or moving firing lines;
- consists of four modules than can be placed on a flat surface in any location;
- guarantees the highest air quality due to perfect ventilation system.





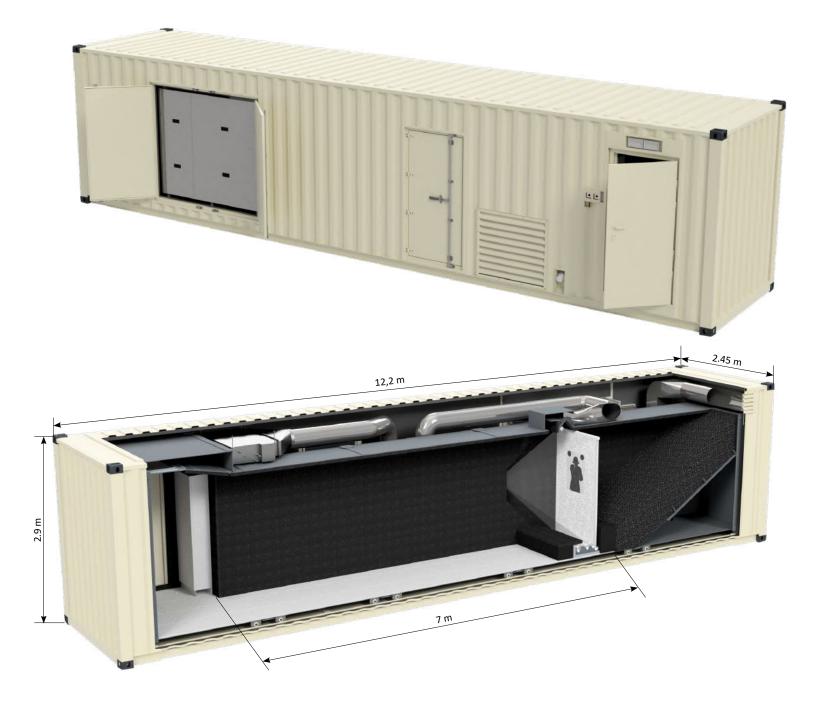


# MOST-1 MOBILE CONTAINER SHOOTING RANGE

### MoST-1 Mobile Container Shooting Range

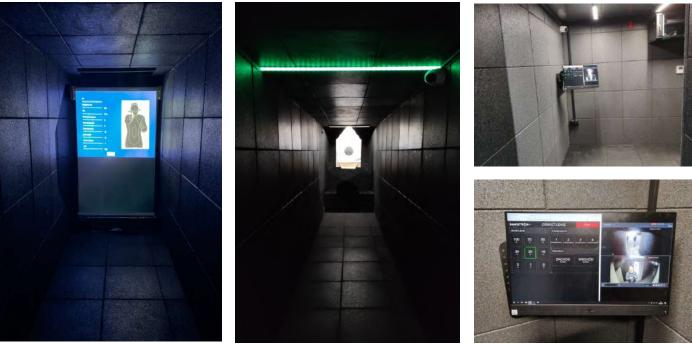
- can be used as a personalized shooting range, commercial facility as well as training facility for uniformed services;
- has one shooting stall;
- has 7m shooting line;
- is equipped with multifunctional firearms simulator designed to address both basic and advanced firearms training and simulate differ distances;
- is equipped with granular bullet trap;
- provides possibility of using ammunition of 3600 J maximum initial energy of the bullet, including weapons listed below:
  - » pneumatic weapons, 4.5 mm (shot),
  - » rimfire pistols and rifles, e.g. 5.6 mm,
  - » centerfire pistols and rifles, e.g. 7.62 mm, 9.65 mm, 11.43 mm,
  - » smoothbore shotguns, e.g. 12 gauge,
  - » rifles and carbines, e.g. 7.62 mm NATO (not supported: armour-piercing, tracer and incendiary rounds);
- is located in the sea container 40ft HC;
- guarantees the highest air quality due to perfect ventilation system.

### MOST-1 MOBILE CONTAINER SHOOTING RANGE



### MOST-1 MOBILE CONTAINER SHOOTING RANGE



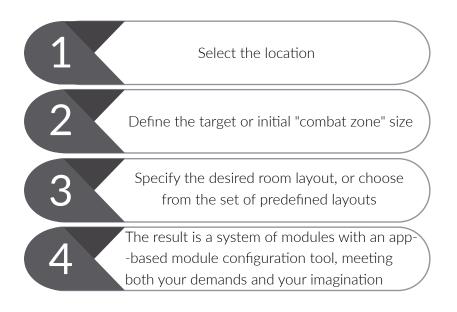




### MOST-SH MODULAR SHOOT HOUSE

#### MoST-SH Modular Shoot House

- A modular system for live ammunition training.
- Available as a fully customized, sheltered training room: a shoot house, an outdoor shooting range, an in-vehicle combat training site, etc.
- Supports scaling of training difficulty, variations in scenario conditions, and challenging CQB training situations.
- Deployable as a training facility with near-life-like conditions.
- Supports live ammunition training with a maximum energy of 3600 J.
- The modular design enables deployment in stages over time.



#### **MoST-SH MODULES**

Type image	Type specs	Type image	Type specs
	KMS-600W mobile bullet trap		SLIDER cover
	PIVOT wall		Window ingress module
	Door breaching module		MoST-SH module configuration tool app

### MoST-SH - FULLY CONFIGURABLE

MoST-SH is for creating combat and firing practice facilities covering any area and room configuration, based on a system of modules



#### MoST-SH - MoST-SH COMBINED WITH MoST-5 / MoST-10

MoST-SH can be located alongside a MoST-5 or MoST-10 modular tactical shooting range, to create a combat training complex for all types of tactical scenario.



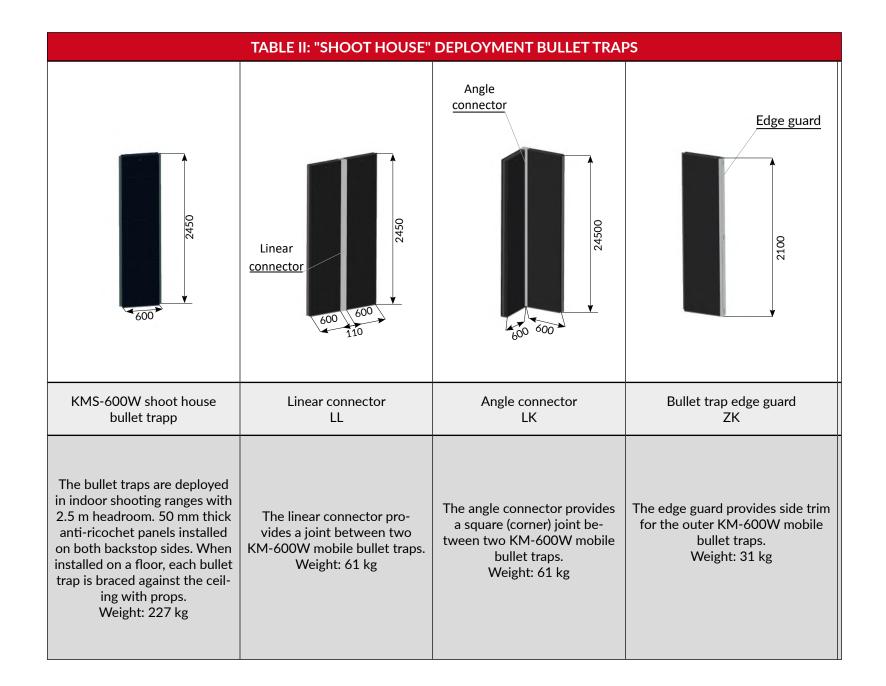


### MOBILE BULLET TRAPS

The mobile bullet traps are intended for live-fire tactical training in sheltered and outdoor shooting ranges. The mobile bullet traps can be deployed in linear series or as standalone units. The mobile bullet traps facilitate any deployment configuration for building "shoot houses". The mobile bullet traps withstand live round fire with a maximum bullet energy of 3600 J, including the following calibres: 9 mm, 5.62 mm, and 7.62 mm (and 7.62 NATO) (excluding: armour-piercing, tracer and incendiary rounds). The KMB-600 bullet traps withstand live round fire with a maximum bullet energy of 6600 J, e.g. .338 LM.

#### TABLE I: STANDALONE MOBILE BULLET TRAPS

	2174
KMR-600 mobile bullet trap	KMB-600 mobile bullet trap
Mobile bullet trap on a whe- eled dolly and a backstop. 50 mm anti-ricochet panels in- stalled on one backstop side. Weight: 150 kg	Mobile bullet trap on a whe- eled dolly and a backstop. 50 mm anti-ricochet panels and 300 mm solid blocks installed on one backstop side. Weight: 345 kg
Ballistic resistance 3600 J	Ballistic resistance 6600 J







### **CERTIFICATE AND CONCESSIONS**



WOJSKOWY INSTYTUT TECHNICZNY UZBROJENIA OŚRODEK CERTYFIKACJI ul. Prym. St. Wyszyńskiego 7, 05-220 ZIELONKA CERTYFIKAT ZGODNOŚCI Nr Z/27/9/2021 Nazwa i adres posiadacza certyfikatu: KLIMAWENT S. A. 81-571 GDYNIA, ul. Chwaszczyńska 194 Nazwa i adres producenta: j.w. Kulochwyt mobilny KMR-600 Kulochwyt mobilny KMB-600 Wyrób spełnia wymagania zawarte w: Wymagania Techniczne Klimawent S.A. nr 01/05/2018: Kulochwyt mobilny KMR-600: wytrzymałość do 3600 J (w tym: 9mm PARA; 5,56 NATO; 7,62x39mm; 7,62 NATO; 7,62x54R). Kulochwyt mobilny KMB-600: wytrzymałość do 6600 J (w tym: 9mm PARA; 5.56 NATO; 7,62x39mm; 7,62 NATO; 7,62x54R; .338 LM LockBase Zgodnie ze sprawozdaniem (świadectwem) z badań wykonanych przez: Laboratorium Instytutu – Zespół Laboratoriów Badawczych Wojskowego Instytutu Technicznego Uzbrojenia, Nr 27/MON/2017, ul. Prym. St. Wyszyńskiego 7, 05-220 Zielonka Nr sprawozdania (świadectwa): LBUSO/31/2018 z dnia 30.05.2018; LBUSO/32/2018 z dnia 30.05.2021; LBUSO/71/2019 z dnia 30.09.2019. Prawo do posługiwania się certyfikatem wydanym według Programu PCW-05, (typu 3 zgodnie z norma PN-EN ISO/IEC 17067:2014) w okresie od 29.05.2021 r. do 06.07.2024 r. dotyczy wyłącznie egzemplarzy wyrobu posiadających właściwości (parametry) jak przedstawiony do badań reprezentant i odpowiadających wymaganiom określonym powyżej. Certyfikat pozostaje w mocy pod warunkiem przestrzegania przez Posiadacza umowy nr 6/2021/D2/11/006/12 z dnia 07.07.2021 r. (Wniosek 6/2021). **KIEROWNIK OŚRODKA** DYREKTOR CERTYFIKACJI calim aun mgr inż. Andrzej BRZYSKI wz. płk dr inż. Michał CEREMUGA Zielonka, dnia 07.07.2021 r.







Klimawent S.A. has been a well-known manufacturer of industrial ventilation equipment for over 30 years. Our offer includes a wide range of filtration devices, workstation exhausts, fans and vehicle exhaust extractors,

including Leopard, Krab, Rosomak and Abrams tanks.

In 2016 Klimawent S.A. started the production of modular and container tactical shooting ranges MoST and mobile bullet traps.

Klimawent S.A. has its own design office and research and development laboratory, thanks to which the devices we manufacture are innovative.





NOTES



# MANUFACTURER

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1/2024

