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# *ANNEX II + III:* TECHNICAL SPECIFICATIONS + TECHNICAL OFFER

**Contract title: Supply of a specialized firefighting vehicle p 1 /…**

**Publication reference:** CB007.1.31.126-1-SU-5

**Columns 1-2 should be completed by the Contracting Authority**

**Columns 3-4 should be completed by the tenderer**

**Column 5 is reserved for the evaluation committee**

Annex III - the Contractor's technical offer

The tenderers are requested to complete the template on the next pages:

* Column 2 is completed by the Contracting Authority shows the required specifications (not to be modified by the tenderer),
* Column 3 is to be filled in by the tenderer and must detail what is offered (for example the words “compliant” or “yes” are not sufficient)
* Column 4 allows the tenderer to make comments on its proposed supply and to make eventual references to the documentation

The eventual documentation supplied should clearly indicate (highlight, mark) the models offered and the options included, if any, so that the evaluators can see the exact configuration. Offers that do not permit to identify precisely the models and the specifications may be rejected by the evaluation committee.

The offer must be clear enough to allow the evaluators to make an easy comparison between the requested specifications and the offeredspecifications.

| **1.**  **Item Number** | **2.**  **Specifications Required** | **3.**  **Specifications Offered** | **4.**  **Notes, remarks,  ref to documentation** | **5.**  **Evaluation Committee’s notes** |
| --- | --- | --- | --- | --- |
| **1** | **1. FOREST FIRE-FIGHTING VEHICLE, MASS CLASS M, CATEGORY 3 – 1 pcs, with the following minimum technical requirements**  1.1. VEHICLE DIMENSIONS:  1.1.1. Maximum height, H max ≤ 3300 mm  1.1.2. Maximum length, L max ≤ 8000 mm  1.1.3. Maximum width, W max ≤ 2550 mm  1.2. GROSS LADEN MASS OF THE VEHICLE (GLM)  1.2.1. Mass 7,5 < GLM ≤ 16 tons  Standard/ reference: EN 1846-1  1.3. ROAD CAPABILI-TIES AND DRIVE  1.3.1. Road capabilities: category 3: All terrain  Standard/ reference: EN 1846 -2  1.3.2. Drive: all axles driven with differential locking  1.4. SUSPENSION  The suspension of the vehicle shall be able to continuously withstand its gross laden mass (GLM) without damage in the intended conditions of use.  1.5. ENGINE  1.5.1. Type: Four-stroke, turbo diesel engine  1.5.2. Level of exhaust gas emissions: EURO VІ  1.5.3. Power ≥ 200 kW  1.5.4. Exhaust system (discharge ends, catalysator, etc.):  - to be constructed so that there is no sparkling.  - all the hot parts, located on the bottom side must be shielded from contact with vegetation  Standard/ reference: EN 1846 -2  1.6. BRAKES  1.6.1. Safety: To be equipped with ABS and EPS or their equivalent  1.6.2. Capability to maintain constant working pressure: Provided with coupling for maintaining the pneumatic system pressure, mounted close to the driver’s door  1.7. TRANS-MISSION  1.7.1. Type: Manual or automatic  1.7.2. Gearbox: not less than 6 forward and 1 reverse  1.7.3. Safety:  - sound and light indication for engaged reverse gear;  - parking sensors or a rearview camera.  1.8. STEERING  1.8.1. Left hand drive steering wheel: adjustable, power assisted  1.9. WHEELS AND TYRES  1.9.1. Front and rear wheels: All terrain tyres suitable for the drive, the load capacity and the vehicle speed  1.9.2. Spare wheel: 1 pcs mounted outside the superstructure, with a tyre the same as the tyres of the driving axles. To be loaded and unloaded easily by one person.  1.9.3. Year of production of the tyres (including the spare wheel tyre): up to 12 months before the delivery  1.10. FUEL TANK  1.10.1. Tank capacity: The capacity of the fuel tank shall allow the more stringent of the following two conditions to be met: travelling 300 km on roads; operating the permanently installed equipment for 4 h, at the usual operational conditions of use if the appliance is fitted with equipment driven by the vehicle engine.  1.10.2. Vehicle fuel tank filler: The vehicle fuel tank filler shall be readily accessible to the usual equipment provided for this purpose (e.g. cans).  1.10.3. Fuel cap: The fuel cap shall have locking mechanism  1.11. ELECTRICAL SYSTEM  1.11.1. Electrical system:  - 24 V;  - 2 additional 12 V couplings in the cabin;  1.11.2. Battery charger capable of charging the batteries without removing them from the vehicle:  - 1 with 220V/16А coupling, mounted next to the driver’s seat;  - IP ≥ 44  1.11.3. Main power switch : 1  Standard/reference: EN 1846 – 2  1.11.4. Location of the batteries: The batteries shall be located outside the cabin in a separate compartment protected from contamination and mechanical damage  1.11.5. Year of manufacturing and warranty period of the batteries:  - to be manufactured up to 12 months before the delivery;  - warranty period – not less than 24 months.  1.12. TOWING DEVICE  1.12.1. Towing devices: Front and rear towing device with locking mechanism.  1.12.2. Electrically driven winch: 1 mounted on the front part of the vehicle with pulling capacity ≥ 50 kN and wire rope with length ≥ 40 m. Remote control of the winch shall be provided (flexible conductor with length not less than 3 m and a control unit)  1.12.3. Trailer towing device: With couplings for the braking system and the electrical system of the trailer  1.13. COLOURING AND COATINGS  1.13.1. Main colour of the vehicle: – red RAL 3000  1.13.2. Additional colour of the vehicle (excluding the chassis) – white RAL 9003  1.13.3. Corrosion protection: For the chassis, for the cabin and for the superstructure  1.13.4. Main colour of the cabin:  - red RAL 3000  - the ceiling of the cabin can be in white on a technical decision by the manufacturer of the chassis  1.13.5. There shall be white stripes with width 250 mm, on both sides of the firefighting vehicle, at a distance of 50 mm below the windows, along the whole length of the vehicle - white - RAL 9003  1.13.6. There shall be two symmetrical white stripes with width 180 mm and at a distance of 90 mm between each other on the forepart of the driver’s cab. The measures shall be calculated by considering the geometrical center of the vehicle - white - RAL 9003  1.13.7. Colour of the front doors - white - RAL 9003  1.13.8. There shall be two symmetrical white stripes with width 180 mm and at a distance of 90 mm between each other on the rear part of the firefighting vehicle. The measures shall be calculated by considering the geometrical center of the vehicle. - colour of the stripes - white - RAL 9003  1.13.9. Colour of the bumpers - white - RAL 9003  1.13.10. There shall be information for the tyre pressure on the fenders of every tyre. The font size of the numbers must be 30 mm. - colour of the letters - white RAL 9003  1.13.11. Sliding in a vertical plane shutters: Made of aluminum alloy without paint coatings and foil  1.13.12. Main colour of the superstructure: Red - RAL 3000. Aluminum plates or slip resistant coatings without paint finish can be used for the top of the superstructure.  1.13.13. Colour of the wheels: red - RAL 3000  1.13.14. Labeling: There should be label on the front doors of the cabin, starting from 50 mm below the windows. On the first row there must be written “I” with font size of 250 mm. 100 mm below the first row there must be written “АКАДЕМИЯ НА МВР” with font size of 100 mm, on one or two rows, depending on the size of the doors.  1.14. LIGHTING AND SPECIAL SOUND AND LIGHT SIGNALS  1.14.1. Front and rear lights - the dipped-beam and position lamps shall be switched on and off automatically with the engine  1.14.2. Front foglights: Standard for the chassis  1.14.3. Special signal lights  - 2 pcs. blue rotating beacons mounted separately on top front part of the cabin with power ≥ 50 W;  - 1 pcs. blue rotating beacon mounted on the top rear part of the superstructure;  - protected against mechanical damage;  - ability to be switched on when the engine is off.  1.14.4. Array light: 2 pcs with power ≥ 25 W, blue, mounted in the front mask of the cabin, protected against mechanical damage  1.14.5. Special sound signal: 1 pcs 2–5 tones electronic siren ≥ 100 W, with speaker, that can be operated from the seats of the driver and the team leader, even when the engine is off  1.15. ADDITIONAL LIGHTS AND LIGHTING DEVICES  1.15.1. Set consisting of halogen floodlights, mast autonomous generator and fuel canister  - floodlights: 2 pcs ≥ 1000 W/ 230 V, with ІР≥ 54, mounted on a fixed telescopic mast with working height ≥ 3 m rising above the upper end of the fire superstructure - The mast shall provide movement of floodlights in horizontal plane 0-360o and in vertical plane 0-180o, and lock in the desired direction.  - The halogen floodlights of the mast shall be supplied by autonomous three-phase AC power generator with rated power ≥ 4,0 kW;  - the power generator must be a mobile one, stored in a compartment on a platform that allows its extraction out of the compartment;  - fuel tube with volume of 20 l with flexible pour neck shall be provided.  1.15.2. Illumination of the compartments of the superstructure: To be switched on when the shutter is open and the overall illumination of the vehicle is switched on  1.15.3. Minimum degree of protection of all lighting ≥ ІР 44  1.16. CABIN  1.16.1. Type: One compartment with two or three rows of seats  1.16.2. Number of seats: not less than 6 pcs  1.16.3. Number of doors: 4 – 2 pcs on each side of the cabin  1.17. HEATING AND VENTI-LATION OF THE CABIN  1.17.1. Air conditioning: Air conditioner or climate control  1.17.2. Ventilation: Forced general circulation  1.18. VEHICLE WINDOWS  1.18.1. Windshield: Panoramic, made of laminated glass ablative, tinted at the top  1.18.2. Side windows: Raising and lowering shall be provided  1.19. CABIN MIRRORS  1.19.1. Side, heated, panoramic, tinted rear-view mirrors- 2 pcs  – one on both sides of the cabin;  - retractable  1.19.2. Mirror providing visibility to the front of the front bumper mounted on the windshield – 1 pcs  1.19.3. Side-view mirrors providing visibility to the front wheel mounted above the front doors - 2 pcs  – one on each side of the cabin  - capability for retraction  1.19.4. Specific requirements: Mirrors shall be adjustable in both planes  1.20. CABIN INTERIOR  1.20.1. “Open door” and “Open shutter” signal: Sound and light signal  1.20.2. Cabin seats: Standard/reference EN 1846-2  1.20.3. Seats for the team members (excluding the one for the driver): Shall provide the integration of SCBA  Standard/reference EN 1846-2  1.20.4. Reading lamp: In front of the team leader seat  1.20.5. Cabin floor cover  - to prevent slipping;  - to be made of durable material.  1.20.6. Coverings of the interior part of the cabin: The coating of the inner surfaces of the cabin shall be made of material that prevents the uptake of dirt and odor and is easy to clean  1.20.7. Audio system: Standard for the chassis  1.20.8. Space for mounting mobile VHF digital radio:  - on proper position to be operated by both the driver and the team leader;  - power outputs of 12 V and 24 V shall be provided.  1.21. DYNAMIC STABILITY  1.21.1. Dynamic behavior and maneuverability of fire trucks: Not less than the required in БДС EN 1846 for fire fighting vehicles of this class  **2. SUPERSTRUCTURE with the following minimum technical requirements:**  2.1. GENERAL REQUIREMENTS  2.1.1. Materials: The body shall be made of anti-corrosion or protected against corrosion materials.  2.1.2. Construction: The superstructure shall be designed and implemented in a matter that allows the assumption of deformations and other dynamic loads when the vehicle is moving.  2.1.3. Mounting of the superstructure to the chassis of the vehicle: Mounting of the superstructure to the chassis of the vehicle shall be approved or meet the requirements of the manufacturer.  2.2. SAFETY REQUIREMENTS  2.2.1. Equipment lockers  - The lockers shall be equipped with sensor for open shutter and a warning in the cabin.  - Each item of equipment, which is located in the lockers of the superstructure shall be attached and secured against unintentional falls.  2.3. ARRANGEMENT OF THE SUPERSTRUCTURE  2.3.1. The equipment lockers shall be located at each side of the superstructure. The lockers shall have vertical roller shutters. - At least two at each side of the superstructure.  2.3.2. Pump compartment – located at the rear part of the superstructure. The pump compartment shall have vertical roller shutter.  2.3.3. Roof of the superstructure  - The roof shall be functional and easily accessible via permanently mounted ladder or steps.  - Additional space shall be provided for storing and securing portable ladders, suction pipes, suction strainer, shovels and beaters for forest fires (fire flapper).  - The standing surface of the roof shall be constructed such that it is able to support the mass of two firefighters (equivalent to 2 x 90 kg) in addition to the equipment being carried, without the roof(s) suffering permanent deformation.  Standard/reference: EN 1846-2  2.4. LOCKERS REQUIREMENTS  2.4.1. All vertical roller shutters: All the vertical roller shutters shall be made of aluminium alloys.  2.4.2. The useful volume of the lockers shall allow the storing of firefighting equipment. There shall have drawers, platforms, stowage trays and stands for storing the following equipment:  - 1 Pcs. generator;  - 4 Pcs. signal cone  - 1 Pcs. sanitary stretcher  - 1 Pcs. collector/siamese joints BB/A;  - 1 Pcs. fire hydrant stand pipe;  - 9 Pcs. flexible backpack fire extinguisher for use in forest fire fighting;  - 2 Pcs. turbo nozzle B with a coupling type Storz B (75 mm);  - 2 Pcs. turbo nozzle C with a coupling type Storz C (52 mm);  - 2 Pcs. nozzle D with a coupling type Storz D (25 mm);  - 4 Pcs. foam attachement (tube);  - 2 Pcs. divider, size C/DCD;  - 2 Pcs. divider, size B/CBC;  - 6 Pcs. coupling adaptor type Storz C/D;  - 4 Pcs. Coupling adaptor type Storz B/C;  - 1 Pcs. pillar hydrant key with ratchet;  - 2 Pcs. underground hydrant key;  - 2 Pcs. coupling wrenche size ABC;  - 2 Pcs. chainsaw;  - 1 Pcs. self contained breathing apparatus;  - number of additional air cylinders - equal to the numbers of the sitting positions in the cabin;  - 1 Pcs. powder extinguisher 6 kg ABC;  - 1 Pcs. CO2 fire extinguisher;  - 1 Pcs. hydraulic jack;  - 1 Pcs. rubber cable for charging the batteries of the vehicle;  - 2 Pcs. wheel wedges;  - 1 Pcs. truck inflator kit.  2.4.3. Operating position: Any of the drawers, platforms, stowage trays and stands shall not require the use of special device or ladder to be downloaded.  2.4.4. Hose shelves shall be separated with panels and provided with hose straps: Fixing devices for hose shelves shall provide storage of:  - 10 Pcs. hose D (Ø 25 mm), 20 m;  - 10 Pcs. hose C (Ø 52 mm), 20 m;  - 10 Pcs. hose B (Ø 75 mm), 20 m.  2.4.5. Lighting  - The equipment lockers shall be equipped with inner lighting, which shall be set in motion at the opening of the roller shutters.  - There shall be lighting above each equipment locker provided with the necessary protection. It shall be lighting the space in front of the locker.  - The protection of inner and outer lighting shall not allow the access of water and dust when using or washing the vehicle (≥ ІР 44)  2.5. FIRE PUMP  2.5.1. Centrifugal fire pump  - 1 Pcs. combined normal and highpressure pump  - Water and foam supply shall be possible when the vehicle is not in motion and when it is in motion  Standard/reference: - EN 1028 -1, EN 1028 -2, EN 1846-3  2.5.2. Pump flow Q [ℓ/min]  - Q ≥ 2400 ℓ/min at 10 Bar;  - Q ≥ 250 ℓ/min at 40 Bar  Standard/reference: EN 1028 -1, EN 1028 -2  2.5.3. Pump control: The fire pump shall be operable either from the pump control panel or from the driver cabin.  2.5.4. Suction inlet  ≥ 1 Pcs. Ø 110 mm at the rear part of the vehicle;  - The suction inlet(s) shall be provided with coupling type “Storz-А” (DIN 14309) and blank cap (DIN 14313).  - The blank cap shall be provided and secured with flexible metal connection.  2.6. PUMP COMPARTMENT  2.6.1. Pump compartment shall be located at the rear part of the vehicle. There shall be located fire pump, foam proportioning system and the valves of the discharge outlets.  2.6.2. Pump control panel shall be possible to display:  - the temperature of the engine;  - the engine oil pressure;  - pump hour meter;  - vacuum;  - pressure;  There shall be located:  - water tank level indicator;  - foam tank level indicator.  2.6.3. Controls located at the pump panel shall operate:  - the engine speed;  - the fire pump;  - the foam proportioning system.  2.6.4. Water and foam system manual: There shall be permanently mounted scheme and manual for water and foam system of the fire pump.  2.7. SUCTION EQUIPMENT  2.7.1. Suction hoses- 4 Pcs. х 2,0 m, Ø 110 mm;  - with couplings type “Storz-А”;  - located in a special compartment at the roof of the superstructure;  - easily accessible;  - secured against unintentional falls;  - protected against breaking, dirt and weather;  Standard/reference: ЕN ISO 14557, DIN 14 323 or other national standard covering its requirements,  2.7.2. Suction strainer  - 1 Pcs. with couplings type “Storz-А”, Ø 110 mm;  - with non-return valve;  - located in the pump compartment or within the suction hoses compartment;  - secured against unintentional falls and breaking;  Standard/reference: DIN 14 362-1 or other national standard covering its requirements  2.7.3. Suction hose, working rope - 2 Pcs. diameter ≥ 8 mm, length ≥ 15 m  2.8. PRIMING SYSTEM  2.8.1. Automatic priming system - 1 Pcs.  - it shall not be exhaust gas ejector priming system  2.8.2. Time for creating vacuum /deaeration and suction of the water at suction height of 7.5 m ≤ 60 sec  2.9. FOAM PROPORTIONING SYSTEM  2.9.1. Fixed foam proportioning system - 1 Pcs.  - made of a material resistant to all kinds of foam;  - it shall provide stepless dosing of foam from 0 to 6 %.  2.10. WATER AND FOAM TANKS  2.10.1. Tanks: Made of materials resistant to corrosion and acids.  2.10.2. Equipment: The tanks shall be equipped with devices measuring the level of the water and foam. Level indicators shall be located in the pump compartment.  2.10.3. Wave-breaker in the tank (baffles)  There shall be a wave-breaker in the tank. They must prevent the occurrence of excessive dynamic forces from the movement of fluid in the tank, which may cause instability of the vehicle when moving.  Standard/reference: EN 1846 – 3  2.10.4. Water tank overflow - 1 Pcs.  The overflow outlet shall be located under the chassis. Regardless the vehicle is moving or not, it shall not allow water from the overflow to access the differentials or wheels.  2.10.5. Geometric form and location of the tanks: They shall provide optimal center of gravity of the vehicle  2.11. WATER TANK  2.11.1. Capacity ≥ 3000 ℓ (3,0 m3)  Standard/reference: EN 1846-3.  2.11.2. Pipe for filling the tank with water: At least 1 Pcs.  - It is designed for filling the water tank from hydrant or other fire fighting vehicle.  - located at the rear part of the vehicle.  - It shall be provided with, ball valve, coupling type “Storz-B” ∅ 75, protective grid and blank cap.  - The blank cap shall be secured with flexible metal connection.  Standard/reference: EN 1846-3.  2.11.3. Sump cleanout: The tank shall be equipped with sump cleanout.  2.11.4. Manhole for providing access to the inner part of the water tank: The opening shall have diameter ≥ ∅ 500 mm. The manhole shall be easily accessible without removing any fixed main components.  2.11.5. Mounting of the water tank to the chassis of the vehicle: Mounting of the superstructure to the chassis of the vehicle shall be approved or meet the requirements of the chassis manufacturer.  2.12. FOAM TANK  2.12.1. Capacity ≥ 300 ℓ (0,3 m3)  2.12.2. Design features  It shall have pipe for filling the tank with foam, equipped with coupling type “Storz-C” ∅ 52 mm and a cap with opening for compensating the vacuum pressure.  The tank shall be connected to the foam proportioning system by a pipe and a ball valve with a diameter ensuring optimum performance.  2.12.3. Mounting of the foam tank to the chassis or the superstructure of the vehicle: Mounting of the superstructure to the chassis of the vehicle shall be approved or meet the requirements of the chassis manufacturer.  2.13. TURRET (FIRE MONITOR)  2.13.1. Turret   * 1 Pcs. * located at the roof of the superstructure; * manually controlled by fully adjustable handle; * suitable for full/spray water jet and foam stream; * rotation range - 360° endless; * swivel range – from ≤ - 10° up to ≥ + 75°; * flow rate ≥ 2400 ℓ/min at 10 Bar; * manually adjustable flow rates; * throw range (water) ≥ 60 m * throw range (foam) ≥ 50 m; * When the turret is in idle position, the vehicle shall meet the requirements about maximum height.   The turret shall have pressure gauge mounted on it.  2.14. RAPID INTERVENTION HOSE REEL  2.14.1. Rapid intervention hose reel - 1 Pcs.   * located at the rear part of the superstructure (inside a locker or the pump compartment); * suitable for normal and high-pressure extinguishing water or firefighting foam; * 1 Pcs. semi rigid hose on the hose reel with length ≥ 60; * 2 Pcs. pistol type nozzles (1 Pcs. mounted on the hose reel and 1 Pcs. extra). * The nozzles shall be suitable for full/spraywater jet and foam stream with adjustable flow rate. * 1 Pcs. foam attachment (tube) for the nozzle; * The rapid intervention hose reel shall allow water supply regardless to the degree of reeling off the hose. * The hose reel shall be provided with brake and device for manual and auto winding of the hose.   2.14.2. Pressure ≥ 4,0 МРа (40 Bar).  2.15. SELF PROTECTION SYSTEM OF THE VEHICLE  2.15.1. Self protection system – 1 pc  Standard/reference: EN 1846 – 3  2.15.2. Self protection system requirements:  - It shall protect the cabin, the superstructure and the wheels of the vehicle during fire.  - It shall be controlled from the cabin.  - It shall be operable - when the vehicle is not in motion and when it is in motion.  2.16. PIPES AND VALVES OF THE FIRE PUMP SYSTEM  2.16.1. Materials: They shall be made of metal resistant to all kinds of foam;  2.16.2. Discharge pipes: 5 Pcs. discharge pipes provided with valves.  - 1 discharge pipe supplying the rapid intervention hose reel;  - 1 discharge pipe supplying the self protection system of the vehicle;  - 2 discharge pipes supplying the outlets with couplings type “Storz-В” (DIN 14308) situated symmetrically, one on each side at the rear part of the vehicle. They shall be provided with blank caps secured with flexible metal connection.  - 1 discharge pipe supplying the turret.  2.16.3. Deformation compensators (when the vehicle is in motion): Deformation compensators shall be provided for all the pipes connecting the water and foam tanks with the pump.  **3. MINIMUM TECHNICAL REQUIREMENTS FOR THE EQUIPMENT**  3.1. RAPID INTERVENTION HOSE REEL  3.1.1. The semirigid hose: With length L=60 m, internal diameter DN 25 mm, reeled in on a braking system hose reel. Operational pressure PN ≥ 40 Bar. With couplings type Storz.  3.1.2. Nozzle: 2 pcs. (one – mounted on the reel and a pare nozzle out of the vehicle). Combined nozzle – for fog and straight stream, which allows change of the flow rate and the operating pressure. With possibility for use of foam attachment (tube).  3.2. STRETCHER – 1 pc  3.3. Emergency backpack for fire brigades – 1 set  3.4. SIAMESE WITH 2 INLETS AND 1 OUTLET (А/ВВ; ∅ 110 mm/ 2 х ∅ 75 mm - 1 pc.  - With couplings type Storz A/B.  - With a blank cap ∅ 75 mm with coupling type Storz B with chain.  Standard/reference: DIN EN 14339  3.5. STANDPIPES FOR UNDERGROUND HYDRANTS - 1 pc.  Certified as to DIN 14375, For the connection to an underground hydrant as per DIN 3221. Inlet DN 80 mm, two outlets 2x75-B with screw-down type valves and Storz B couplings.  Standard/reference: DIN EN 14339  3.6. Back-pack type collapsible pump - 9 pcs.  - Capacity ≥ 18 ℓ.  - Charging hole with a diameter of approximately 100 mm, with water resistant lid. Central strap for carrying in arms and shoulder harnesses. It is with a pistol pump and an adjustable nozzle for compressed and dispersed /or fog flow/ water flows. Compressed flow range ≥ 6 m; dispersed flow range ≥ 2 m.  3.7. forest Fire swatter  3.7.1. Forest Fire Swatter - 20 pcs. (9 pcs in the vehicle and 11 pcs for. Reserve)  - with wooden handle with length L=2 m.  3.8. LIGHTING DEVICE  3.8.1. With LED, for use in explosive atmosphere - 2 pcs.   * Explosion proof: * Ex II 2G Ex ib II С T 4 Gb zone 1 and 2; * Ex II 2 D Ex ib III C T 135 oC zone 21 and 22   Protection class: IP 65   * Working temperature: - 20 оС to + 40 оС * - Range of the light beam ≥ 80 m. * Maximum weight (incl. batteries) ≤ 0.5 kg * Lighting time ≥ 5 h;   Spare glass – 1 pc. For every device  Standard/reference: Directive 94/9/EC, Directive 2004/108/EC, Directive 2004/104, EN 60079.  3.8.2. Place of lighting devices: To be provided place for the lighting devices in the crew cabin  3.9. BATTERY RECHARGING UNIT (FOR LIGHTING DEVICE) - 2 pcs.  Every unit consists: 2 chargers: 1 for charging from the electrical system of the vehicle 12/24 V and 1 for charging from 220-240 V AC 50 Hz  3.10. HOSE  3.10.1 Hose В (Ø75 mm) - 10 sets  Nominal pressure 16 bar, with length L=20 m, light-weight. Diameter 75 mm, with couplings type Storz, made of aluminium alloy B (Ø 75 mm). The material is fabric made of circular looms from twisted high-tenacity polyester yarn and the inner lining – made of synthetic rubber.  3.10.2. Hose С (Ø52 mm) - 10 sets  Nominal pressure 16 bar, with length L=20 m, light-weight. Diameter 52 mm, with couplings type Storz, made of aluminium alloy C (Ø 52 mm). The material is fabric made of circular looms from twisted high-tenacity polyester yarn and the inner lining – made of synthetic rubber.  Standard/reference: DIN 14 811  3.10.3. Hose D (Ø25 mm) - 10 sets  Nominal pressure 16 bar, with length L=20 m, light-weight. Diameter 25 mm, with couplings type Storz, made of aluminium alloy D (Ø 25 mm). The material is fabric made of circular looms from twisted high-tenacity polyester yarn and the inner lining – made of synthetic rubber.  Standard/reference: DIN 14 811  3.11. NOZZLES  3.11.1. Turbo nozzle with coupling Storz В - 2 pcs: fog and straight stream, flow rate 130-250 – 400 l/min at 6 Bar. With coupling Storz В.  Standard/reference: EN 15182-2  3.11.2. Turbo nozzle with coupling Storz C - 2 pcs: fog and straight stream, flow rate 60-120 – 180-240 l/min at 6 Bar. With coupling Storz C  Standard/reference: EN 15182-2  3.11.3. Nozzle with coupling Storz D- 2 pcs: fog and straight stream  3.12. FOAM ATTACHMENT (TUBE)  3.12.1. Foam attachment (tube) for turbo nozzle - 5 pcs:  - 2 pcs. For use with turbo nozzle with couplings “Storz В”;  - 2 pcs. For use with turbo nozzle with couplings “Storz C”;  - 1 pc. For use with the nozzle of the rapid intervention hose reel.  3.13. DIVIDERS WITH 3 OUTLETS  3.13.1. Divider with 3 (three) outlets with couplings STORZ B-CBC - 2 pcs, made of light aluminium alloy with couplings STORZ B-CBC,  Standard/reference: DIN 14 345  3.13.2. Divider with 3 (three) outlets with couplings STORZ C-DCD - 2 pcs, made of light aluminium alloy with couplings STORZ C-DCD  Standard/reference: DIN 14 345  3.14. ADAPTERS  3.14.1. Adapters for couplings STORZ B/C - 4 pcs, for couplings STORZ B/C, made of light aluminium alloy  Standard/reference: DIN 14 342  3.14.2. Adapters for couplings STORZ C/D - 6 pcs, for couplings STORZ C/D, made of light aluminium alloy  Standard/reference: DIN 14 341  3.15. SPANNER FOR PILLAR TYPE HYDRANT  3.15.1. Spanner for pillar type hydrant – 1 pcs.  Standard/reference: DIN 3223  3.16. WRENCH FOR UNDERGROUND HYDRANT  3.16.1. Wrench for underground hydrant with square nut 23 mm. – 1 pcs.  3.16.2. Wrench C for underground hydrant with square nut 32 mm. – 1 pcs.  Standard/reference: DIN 3223  3.17. COUPLING STORZ SPANNER BC  3.17.1. Coupling storz spanner BC - 2 pcs.  Standard/reference: DIN 14 822  3.18. MOTOR SAW FOR WOOD  3.18.1. Motor saw for wood with gasoline engine, spare guide bar and chain - 2 pcs  - With one-cylinder, two-stroke, gasoline engine;  - Power ≥ 2,0 kW  - With inertia-brake and vibration reducing system;  - Guide bar ≥ 400 mm  - Chain pitch – 0,325” / 3/8”.  - Weight without guide bar and chain. ≤ 6 kg.  3.18.2. Each motor saw must have:  Guide bar – 2 pcs.;  Chain – 4 pcs.;  1 set of service tools  3.18.3. User guide: in Bulgarian for each motor saw.  3.19. SCALING LADDER  3.19.1. Scaling ladder 4 pieces set - 1 pc  - Made of aluminium.  - Slip-resistant exchangeable ladder shoes.  - Feather/spring snatching locks (steel) and fixing stoppers (aluminium).  Standard/reference: БДС EN 1147 or equivalent  3.20. BREATHING APPARATUS  3.20.1. The number of the self contained open-circuit compressed air breathing apparatus with full face mask shall be equal to the number of the seats in the cabin..  Standard/reference: БДС EN 137 type 2 (for fire services) or equivalent, PED Directive 97/23/ЕС:1997 CE marking  3.20.2. Nominal pressure: 300 bar (30,0 МРа)  3.20.3. Pressure in breathing mask: Positive  3.20.4. A breathing apparatus must have: typical body harness, lung governed demand valve, valved pressure vessel, connecting hoses for high and medium pressure, compressed air cylinder, full face mask, second medium pressure connector, warning device, pressure indicator (control manometer), rescue hood.  3.20.5. Body harness: Antistatic, ergonomic, made of shock- and temperature resistant material. With bold straps with soft padding on the shoulders and belt made of fire-resistant materials and buckles with anti-tamper mechanisms. Belts and belt can be removed for cleaning and can be replaced individually as needed. To be equipped with a universal bar and holder (or other restorative device) for fastening and fixing a compressed air cylinder.  3.20.6. Lung governed demand valve – for positive pressure. Certified as to БДС EN 137 or equivalent. To be activated after one breathing.  3.20.7. Pressure reducing valve: To provide air flow sufficient to power the full face mask and a rescue hood. Allowing operation for a minimum of six years without maintenance from the date of delivery of the SCBA. To allow work with cylinders with working pressure 300 Bar  3.20.8. Hoses for high and medium pressure: Made of chemical and temperature resistant material, which has the necessary mechanical strength and can withstand the impact of UV rays. To have good resistance to bending and not to change its properties.  3.20.9. Compressed air cylinder - 2 pcs. (1 pcs. mounted on the breathing apparatus and 1 pcs. spare cylinder in the vehicle).  Fill volume ≥ 6 l and working pressure 300 Вar, made of composite material, with valve.  Certified as to БДС EN 137 or equivalent.  Standard/reference: PED Directive 97/23/ЕС:1997 and valve according to БДС EN 144 or equivalent.  3.20.10. Full face mask - 30 pcs.  To be with CE mark.  With positive pressure. Made of materials with high resistance of chemical and mechanical impact, heat and UV-light. One size, fits all. With speech membrane, which allows efficient communication. With coupling for quick connection to lung governed demand valve. The mask to be provided with strap (suspension) of the neck.  With panoramic visor, made of scratch resistant material. And providing maximum view and the ability to swap breakage. The viewfinder can not bend, increasing, decreasing and distorts the observed objects. The mask is included in the certificate of the apparatus БДС EN 137 or equivalent.  Standard/reference: БДС EN 136 class 3 or equivalent  3.20.11. Medium pressure adapter: Second medium pressure connector  3.20.12. Warning device: The warning device shall activate at a pressure of 55 ± 5 Bar.  Standard/reference: БДС EN 137  3.20.13. Manometer calibrated in 10 Bar in the working range of the breathing apparatus, protected from mechanical damage, allowing pressure monitoring with no limited visibility and displayed in a convenient place for operator  Standard/reference: БДС EN 137  3.20.14. Rescue hood - one piece for each breathing apparatus  With a second medium pressure hose with a constant flow of air. The hood must allow easy insertion of an unconscious person. It must be made with pulmonary valve without the need for connection. When the hood is not in use, to be worn in handy pouch (bag), which can be attached in easy way to fire belt.  3.20.15. Year of production: Every part of the breathing apparatus, including the mask and the air cylinders, must be produced maximum 12 months before the delivery of the product.  3.20.16. User guide: Every one of the breathing apparatus must be completed with user guide in Bulgarian. The guide must describe the parts of the apparatus, mask and air cylinder. The testing period and the types of tests, verifications and a list of the parts, which must be change ant the period of their change.  3.20.17. Warranty: Not less than 24 months after the date of signing of the packing slip.  3.21. fire extinguisher CО2 - 1 pc.  Fire extinguisher with carbon dioxide 5-8 kg  Standard/reference: БДС EN 3  3.22. GAS DETECTOR FOR TOXIC OR COMBUSTIBLE GASES  3.22.1. Gas detector for toxic or combustible gases – 1 pcs.  3.22.2. Number of the detected gases ≥ 5  3.22.3. Temperature -20 to +50 ºС  3.22.4. Water and dust resistant ≥ IP 65  3.22.5. Explosion proof ≥ II 2G Eex ia d IIC T4  3.22.6. Display: color  3.22.7. Display mode: Normal display of instantaneous gas  3.22.8. Battery recharger – 220 V and adapter for 12 V or 24 V. The device to be placed on top, optional port for PC connection, plug and power cord with a 12 V cigarette lighter of the vehicle  3.22.9. Weight with the batteries ≤ 1,2 kg.  3.23. NAVIGATION SYSTEM  3.23.1. Navigation system – 1 pc.  3.23.2. Screen size ≥ 6.0”  3.23.3. Resolution ≥ 800 x 480 pxl.  3.23.4. Display: color  3.23.5. Voice guidance: Natural voice guidance in Bulgarian  3.23.6. Menu language: Bulgarian  3.23.7. Coverage area: Map of Bulgaria with “lifetime” upgrading on internal memory  3.23.8. Memory card slot: microSD card slot  3.23.9. Memory card: microSD card 8GB  3.23.10. Rechargeable unit: Charger for 220 V and cable for charging from the lighter of the vehicle (12 V)  3.23.11. Battery: Rechargeable  3.23.12. Mount: To be provided a portable mount  **4. ADDITIONAL ACCESSORIES FOR THE CHASSIS**  4.1. VEHICLE FIRST AID KIT – 1 pcs.  4.2. DRY POWDER FIRE EXTIN-GUISHER – 1 pcs. abc  Standard/reference; БДС EN 3  4.3. REFLECTIVE TRIANGLE – 1 pcs.  4.4. HYDRAULIC JACK - with load-bearing capacity ≥ 10 t. – 1 pcs.  4.5. SPIN WRENCH – 1 pcs.  4.6. Drawbar for towing vehicles - Standard drawbar, proper for the proposed vehicle with length ≥ 4 m – 1 pcs.  4.7. Rubber BATERY CHARGING CABLE - Length ≥ 10 m, with 230V/16А coupling and “Schuko” socket - 1 pcs.  4.8. wheel chocks – 2 pcs.  4.9. TYRE INFLATOR HOSE - Length ≥ 10 m, with manometer/pressure gauge – 1 pcs.  **5. TRAILER FOR TRANSPORTATION OF EQUIPMENT**  5.1. NUMBER OF AXLES ≥ 1 (single or double-axle)  5.2. LOAD-BEARING CAPACITY ≤ 3500 kg  5.3. DIMENSIONS: To have enough space to store the listed equipment.  5.4. BODY:  - the body of the trailer shall be designed and constructed, in a way that it will be able to withstand deformations and other dynamic actions during movement  - strengthened construction for work in permanent loading condition and readiness regime  - to be compatible with the firefighting vehicle towing device.  5.5. BODY MATERIALS: Anti-corrosion or corrosion-protected materials  5.6. BRAKES: To be equipped with pneumatic brake system and parking brake  5.7. TRAILER SUPPORT LEGS ≥ 2  5.8. SPARE WHEEL - 1 mounted outside the superstructure, with a tyre the same as the tyres of the main tyres. To be loaded and unloaded easily by one person.  5.9.. LIGHTING  5.9.1. Rear lights: to be equipped with parking stop lights and turn lights  5.10. COLOURING AND COATINGS  5.10.1. Main colour of the trailer: red RAL 3000  5.10.2. Corrosion protection coatings: All elements and details without paint coating shall be protected by galvanic coatings or coatings of harmless plastic materials with the necessary resistance to UV rays, atmospheric and other impacts  5.10.3. Colour of the wheels: red - RAL 3000  5.11. COMPARTMENTS  5.11.1. Arrangement: Proper space for storage of: 1 motorpump, 4 suction hoses, 1 suction strainer and 2 suction hose working ropes.  5.11.2. Safety requirements: Every piece of equipment, stored in the compartments of the superstructure shall be secured against falling.  **6. MINIMUM TECHNICAL REQUIREMENTS FOR THE EQUIPMENT OF THE TRAILER**  6.1. MOTORPUMP  6.1.1. Motorpump – 1 pcs.  6.1.2. Engine: Four-stroke, internal combustion, gasoline engine with power ≥ 40 kW and volume ≥ 1 l  6.1.3. Starter: Electrically driven by own battery.  6.1.4. Low-pressure centrifugal pump with flow rate Q ≥ 800 l/min at 0,8 MPa (8 bar).  Standard/reference: EN 14466, PFPN 10-1500 or other equivalent  6.1.5. Suction inlet: 1 ∅ 100 - 110 mm, with coupling “Storz-А” with blank cap attached to the body of the pump by flexible connection  6.1.6. Outlets: 2 pcs. with shut-offs, couplings type “Storz-В” and blank caps, attached to the body of the pump by flexible connections  6.1.7. Pump control panel shall be equipped with:  - vacuum pressure gauge  - pump hour meter;  - cyclometer  6.1.8. PRIMING SYSTEM  - automatic switch-on  - max. time for creating vacuum /deaeration and suction of the water at suction height of 7.5 m ≤ 60 sec;  - it shall not be exhaust gas ejector priming system  6.1.9. Supporting frame: Lightweight frame with four retractable handles  6.1.10. Weight of the fully equipped pump (including the fuel, the oil and the battery) ≤ 200 kg  6.1.11. Storage of the pump: In a separate compartment of the trailer superstructure, on a sliding platform, allowing its movement out of the compartment. The sliding platform shall have locking mechanisms in open and closed position.  6.1.12. Suction hoses: 4 х 2,5 m, Ø 100-110 mm with couplings type “Storz”  Standard/DIN EN ISO 14 557 or equivalent  6.1.13. Suction strainer: 1 Ø 100-110 mm with non-return valve and couplings type “Storz”  Standard/reference: DIN EN ISO 14 362 or equivalent  6.1.14. Rope for the valve of the strainer - 1 with length 15-20 m.  6.1.15. Suction hose, working rope - 1 with length 20-30 m.  **7. WARRANTY PERRIODS**  7.1. Warranty periods from the date of signing the acceptance protocol  7.1.1. For the chassis of the firefighting vehicle and the trailer, regardless of mileage ≥ 24 months  7.1.2. For the motorpump ≥ 24 months  7.1.3. For the superstructure of the firefighting vehicle and trailer ≥ 24 months  7.1.4. Against corrosion of the firefighting vehicle and trailer ≥ 24 months  7.1.5. For the fire pump ≥ 24 months  7.1.6. For the water and foam tanks ≥ 24 months.  **Additional requirements/ancillary services**   * Training of the Contractig Authority’s personnel - within 3 working days after the delivery * Mobile service (The Contractor shall perform maintenance/repair works at any location specified by the Contracting Authority on the territory of the Republic of Bulgaria.) * Response time for mobile service in emergency situations - up to 24 hours in working days and up to 48 hours during weekends and holidays. |  |  |  |