

TECHNICAL REPORT BASE AMBULANCE

** N.B. I modelli indicati nell'Annex 1 sono indicativi della tipologia richiesta. E' accettata la fornitura di beni con caratteristiche uguali o superiori a quello marca e modello indicato.

N.B. The models indicated in Annex 1 are indicative of the type requested. The supply of goods with characteristics equal to or superior to the brand and model indicated is accepted.

1. CONSTRUCTION FEATURES			
	n°		
1.1	1	high roof with rear swing doors and full-height sliding side door. - Right-hand drive vehicle – (LHT- Left-Hand Traffic) - Driver's cabin: 2 seats - Sanitary compartment: 4 seats plus stretcher	
1.2	1	Strengthening of the original van structure by creating a self-supporting grid with internal frames with joints through electro-welding of steel profiles and sheets to form an integral safety cell for the entire healthcare compartment. Thickness of 1.5 mm for the perimeter panels and 5 mm for the plates positioned near the armchairs, apparatus and electromedical equipment. Total painting of all electro-welded or modified parts with synthetic and paintable anti-rust mod. BX0137. Creation of a dividing bulkhead with a tubular grid of minimum thickness 1.5 mm with GRP coverings and interiors in Class 1 fireproof and self-extinguishing according to the CSE RF/2/75/a and CSE RF 3/77 standards.	
1.3	1	Soundproofing of the driver's cabin Legislative Decree. 81/08 concerning compliance with the requirements related to the exposure of workers to NOISE and VIBRATIONS for the driver.	
1.4	1	Windows of the sanitary compartment: sliding glass on the left rear side; sliding glass on the right side door; fixed glass on the rear doors; opaqueness of the windows for 3/4.;	
1.5	1	Polyester-GRP partition wall with internal frame in steel profiles and sheets, equipped with large sliding safety windows; double recessed compartment underneath, the one on the left is designed to house a rear-facing seat and the one on the right is designed to house a stretcher chair, second stretcher or other medical equipment; the aforementioned construction of the partition wall allows all the sliding positions of the original driver's seat to be maintained.	
1.6	1	Single-block walking surface in fireproof and non-deformable MDF, made entirely of a watertight tub and covered with a special Sika Transfloor rapid pigmented material that is completely free from infiltrations to ensure the possibility of washing and disinfecting with liquid ablutions.	
1.7	1	Insulation of all compartments with heat- and sound-absorbing, fireproof and non-toxic material (including roof and doors) made of melamine foam panels with a thermal conductivity of 0.033 W/mK at 10°C; sound insulation ISO 5128-1980.	
1.8	1	Interior trim including roof in reinforced polyester fiberglass with CORE-MAT layers with precision joints and sealing of each joint with polymer sealant in order to eliminate any possible infiltration and allow perfect cleaning and disinfection.	
1.9	1	Polyester-fiberglass panel for left rear door with niche for housing materials equipped with anti-fall edge, usable if required to house a folding stretcher chair with the addition of an appropriate locking system or a scoop stretcher.	
1.10	1	Polyester-fiberglass panel for right rear door equipped with niche for housing various materials or a set of burglary tools.	
1.11	1	Polyester-fiberglass panel for sliding side door equipped with anti-fall edge.	
1.12	1	Rear and side under-door trim in aluminum profile to prevent wear and facilitate roll-on and roll-off operations.	

1.13	1	Rear bumper trim in anti-slip rice grain aluminum	
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2.		DRIVER'S CABIN	
	n°	Housing for Sintex/ss command and control unit positioned on a special dashboard central part	
2.1	1	Provision for insertion of R/T radio on dashboard	
2.2	1	Housing for general electrical panel with removable aluminum cover located on the bulkhead behind the driver's seat.	
2.3	1	Provision for electrical equipment such as inverter, battery charger, stabilized power supply located behind the companion's seat.	
2.4		Housing for approved 3 kg fire extinguisher positioned on the internal pillar on the companion's side.	
2.5	1	Provision for insertion of R/T radio on dashboard	

3.		HEALTHCARE SECTOR EQUIPMENT AND FURNISHINGS	
	n°		

		<p>POLYESTER RESIN - VTR</p> <p>The internal processing of the ambulance is carried out using modular panels of monoblock fiberglass with a selfsupporting structure to facilitate any disassembly in the event of extraordinary maintenance or repairs, in a relaxing BLUE color.</p> <p>Fiberglass is resistant to impacts and stresses, very low porosity, fireproof in Class 1 and self-extinguishing, nonhygroscopic, resistant to wear and corrosion and not affected if subjected to disinfection, a composite material with high mechanical characteristics, resistance to bending, resistance to impact, thermal resistance, odorless, perfectly sanitizable and self-extinguishing.</p> <p>It also has particular characteristics such as resistance to atmospheric agents, the absence of porosity, easy cleaning and disinfection, the possibility of being shaped, rounded and without sharp edges, making it particularly suitable for this type of setup.</p> <p>The set-up is created by assembling only three panels, the right and left side panels complete with part of the attic and the partition between the driver's cabin and the sanitary compartment: this system allows for a smaller number of joints, therefore greater sealing and fewer vibrations in the sanitary cell.</p> <p>To insulate and soundproof the sanitary compartment, sheets of heat-insulating material with high heat and sound absorbing and self-extinguishing power are placed between the original sheet metal of the vehicle and the fiberglass panels. An intermediate iron framework treated with anti-corrosive products is also created on the body, with the dual function of supporting the fiberglass panels and supporting all the medical equipment arrangements. All the materials we use comply with current regulations, are certified and self-extinguishing. The construction of the furniture inside the sanitary compartment follows (as required by En 1789) the regulations on passive safety with the elimination of sharp edges and connections with a minimum curvature radius of 3 centimeters.</p> <p>Customized interior colors: side panels, bulkhead and roofs in white and floor, doors, handrails and handles, drawer fronts, cabinet doors and seat upholstery in light blue. Colors available on request: light blue, yellow, green, wisteria.</p> <p><u>6-7MM GRP THICKNESS</u></p> <p><u>COLORS AVAILABLE: YELLOW, LILAC, LIGHT BLUE OR GREEN</u></p>	
	1	Construction of a large wardrobe leaning against the left wall in polyester-GRP made up of three independent modules.	
3.1.	1	I modul1:	
3.1.2	1	Front column equipped with 3 drawers with safety lock and possibility of blocking in the open position; stainless steel waste container applied to the lower door with swing opening and removable for cleaning.	
3.1.3	1	Column dimensions: 725x600 mm	
3.1.4	1	Lower compartment dimensions: 350x515 mm	
3.2.	1	II module:	
3.2.1	1	<p>Equipped wall consisting of a shaped panel placed above the worktop extending to under the wall unit equipped with rear reinforcement plates for fixing equipment and instrument racks; medical gas supply bar applied in a special transversal seat on the upper part of the panel; electrified bar equipped with 12V and 220V power sockets (if requested) placed in a special seat in the upper part of the panel and in the special vertical groove in a median position with respect to the left wall. Dimensions: 685x1225 mm</p> <p>The system consisting of the worktop and equipped wall is provided with provisions for housing the defibrillator and the lung ventilator.</p> <p>New integrated glove holder system for 4 sizes in the counter-bulk where the boxes will be housed; the gloves will be individually removable from the medical compartment and the boxes replaceable from the driver's cabin.</p>	
3.3	1	III module:	
		<u>Application and assembly of rear oxygen cabinet (instead of housing them in the driver's cabin)</u>	

3.3.1	1		
3.4	1	Wall cabinet fixed to the full-length roof elevation, consisting of two large compartments equipped with anti-fall edge and closure with a cylindrical sector lexan door that can be opened with a retractable rotation movement assisted by two gas springs; the compartments are equipped with independent and/or centralized internal lighting and additional lexan window in the lower part of the wall cabinet to facilitate the retrieval of the contained devices.	
3.4.1	1	Wall cabinet fixed to the right-hand roof elevation, consisting of a large compartment equipped with anti-fall edge and closure with a cylindrical sector lexan door that can be opened with a retractable rotation movement assisted by two gas springs; the compartments are equipped with independent and/or centralized internal lighting and additional lexan window in the lower part of the wall cabinet to facilitate the retrieval of the contained devices. Access Door Dimensions: 1265x220m Internal Dimension 1300x400m	
3.5	1	Attic cabinet obtained above the full-width driver's cabin equipped with a closing door with tilt opening assisted by two gas springs and internally illuminated with a ceiling light	
3.6	1	Central tunnel consisting of:	
3.6.1	1	Recessed central compartment for housing:	
3.6.2	1	Anti-oscillation IV holder for plastic and glass infusion bottles	
3.6.3	3	Hooks for infusion bags	
3.6.4	1	Oxygen supply point with descent above the head of the stretcher patient using an oronasal mask and connection tube	
3.6.5	1	Double ducting for uniform diffusion of air conditioning through 6 adjustable vents (three on the right and three on the left); housing in the rear part with semi-recessed under spoiler of the rear evaporator of the air conditioning equipped with casing for inspection and maintenance.	
3.6.6	4	Handlebars with steel core and shock-absorbing polyurethane foam coating, shaped and integrated into the tunnel profile.	
3.6.7	1	Aeration system (extraction / intake) with electromagnetically operated grille completely integrated inside the tunnel, with three speeds settable by the command and control unit, allows approximately 30 changes per hour. .	
3.6.8	1	Lighting system consisting of n° 2 full-length ceiling lights completely recessed equipped with a lexan screen that can be removed with a simple finger pressure for easy maintenance and cleaning, the system is also equipped with n° 6 adjustable recessed LED spotlights in a special pre-formed housing.	
3.7		Seats equipped with approved seat belts and with reel, anatomically padded and covered in fireproof washable and disinfectable leatherette of the best quality and guarantee:	
3.7.1	1	Bulkhead chair with folding seat arranged in the direction of travel with the patient's head and padded backrest. M1 certification	
		On the right side between the sliding door and the rear door:	

3.7.2	1	Anatomical chair with headrest and armrests arranged in the direction of travel CAT.M1, equipped with a 180° rotating column, adjustable backrest and seat that folds up against the backrest. M1 certification	
3.7.3	1	Second seat facing forward with headrest and armrests arranged in the direction of travel CAT.M1, equipped with a 180° rotating column, adjustable backrest and seat that folds up against the backrest.	
		Provision for housing a scoop stretcher in a special compartment between the bulkhead and the driver's cabin in a vertical or horizontal position with the possibility of easy extraction from the sliding door side	
3.8	1	Self-loading stretcher model CARRERA TEC S SPENCER code CA11054C complete, solid stretcher, capable of rewriting the parameters of excellence in its category. The stretcher has a harmonious design and is supplied with two STX 702 model belts. Length: 1970 mm Width: 570 mm Weight: 32 Kg. Load capacity: 160 Kg. 200 mm wheels Rear brakes Reclining side rails	
3.8.1	1	Stretcher lock: stops and conveyors for primary stretcher according to European standard EN 1789 10G	
3.8.2	1	TRANSLATABLE stretcher support	
3.9	2	Foamed rear and side door handles.	
3.10	1	3 kg fire extinguisher housed in the sanitary compartment.	
3.11	1	Three-speed roof fan/extractor system (over 30 req./h - 800 m3/h) with cover integrated into the rear spoiler with various function control from the main control unit in the driver's cab	
3.12	1	Independent heating system for the sanitary compartment with double 7000 Kcal fan heater and heat exchanger powered by parallel circuit insulated pipes that derive liquid from the engine cooling system.	
3.13	1	Air conditioning system - Double evaporator system for sanitary compartment with independent adjustments; three-speed ventilation unit with adjustable emission nozzles; on tunnel ducting, oversized and electro-ventilated condenser; Air flow rate 450 m3/h at 3500 Kcal/h, air speed to the condensers 4 m/sec, humidity 50%, air recirculation 100%.	

4.		OXYGEN THERAPY SYSTEM	
	n°		
4.1	1	Double cradle aluminum container for two oxygen cylinders equipped with safety lock	
4.2	1	Provision in the rear area for n°2 oxygen cylinders of 7 - 10 lt	
4.3	2	Membrane pressure reducer	
4.4	2	Electronic pressure gauge	
4.5	1	Exchanger for switching from I to II cylinder.	

4.6	1	Nebulizer humidifier with flow meter and quick coupling	
4.7	1	PVC oronasal oxygen therapy mask with elastic neck	
4.8	1	Venturi system secretion aspirator with 500cc sterilizable collection jar, silicone tube and suction valve. ASPIRATOR WORKING WITH OXYGEN SYSTEM	
4.9	3	Quick-fit sockets according to UNI 9507 standards for centralized oxygen supply.	
4.10	1	Aluminum beam for housing oxygen sockets (compressed air and vacuum sockets if the relevant systems are installed), incorporated into the structure of the main cabinet	
4.11		The oxygen therapy system is made with very high resistance pipes laid completely inside fireproof, crush-proof sheaths. All the materials of the system are for exclusive use for oxygen, compliant with EEC regulations as required by UNI EN 1789:2007. CE 0051 approved system and compliant with Directive 93/42 Medical Devices	

5.		ELECTRICAL SYSTEM	
5.1	1	SINTEX PLUS electronic control unit for command and control of all functions of the sanitary compartment consisting of a membrane keyboard with microswitches and LED indicators in different color groups to facilitate recognition and activation, LCD graphic monitor in central position The buttons activate the following functions	
5.2	1	SINTEX CAB PLUS control unit for command and control of all functions that can be activated from the driver's cabin consisting of a membrane keyboard with microswitches equipped with backlit symbols and LED indicators, in different color groups to facilitate recognition and activation. 2-line, 16-character alphanumeric display	
5.3		Lighting system consisting of:	
5.3.1	2	Fully recessed ceiling lights with 256 LEDs to ensure uniform, shadow-free lighting, equipped with a removable Lexan screen with a simple finger press for easy maintenance and cleaning, the system guarantees lighting greater than 300 lux in the patient area and is designed to reduce shadow areas, it also allows partial switching on that activates the I and II diagonals in succession and finally all four sets of LEDs (64 LEDs per set);	
5.3.2	2	The system is also equipped with n° 2 spotlights with concentrated adjustable LED light built-in in the central part	
		at the front and rear of the tunnel;	
5.3.3	4	Further equipment of n° 4 spotlights with diffused LED light built-in in the front and rear of the tunnel with synchronous switching on when the rear doors or the side hatch are opened.	
5.3.4	2	N° 2 full-length ceiling lights with diffused night blue LED light built-in in the roof.	
5.4	2	LED light profiles built-in in special anodized aluminum bars located at the entrance thresholds of the side hatch and the rear doors to illuminate the access steps and the areas below	

5.5	4	12V jack-type power sockets.	
5.6	1	Provision for transceiver radio and installation of VHF antenna (144-170 MHz) with grounded metal shielding and coaxial cable running to the dashboard.	
		<p>Safety. The electrical system is laid entirely inside fireproof and crush-proof sheaths using flame-retardant cables of the N07-VK type The electrical system of the sanitary compartment is managed by a Can-Bus system.</p> <p>All sockets are controlled by a special safety system: the 12V sockets are regulated by fuses, the 220V sockets are regulated by circuit breakers in the event of overload or short circuit they are automatically deactivated</p> <p>External power supply with the external 220V socket inserted it will not be possible to start the vehicle</p>	

6.		EXTERIOR LAYOUT	
6.1	4	<p>LED headlights N°2 LED headlights in the front area on brackets N°2 LED headlights in the rear area on spoiler All the headlights will be positioned on the corners of the roof</p>	
6.2	/	<p>The front headlights will be housed directly on the roof of the vehicle</p> <p>Rear external spoiler in GRP with features as described above, for housing side headlights, intermittent orange lights, white light for rear loading area illumination synchronous with the opening of the rear doors and disengagement button positioned on the right internal pillar.</p>	
6.3	1	Fiam siren kit consisting of an electronic MODULE with approved two-tone sound warning device and a pair of transducers positioned either in the engine compartment or on the roof of the vehicle or on any front spoiler.	
6.4	1	Supply and installation of an acoustic warning device - activated when reverse gear is engaged - to signal the vehicle in motion (buzzer - Beep/Beep) BIP	
6.5	1	Automatic mechanical side step at the side access, synchronous with the opening of the sliding side door.	
6.6	1	Perimeter reflective band in accordance with the Ministerial Decree of ref., 20cm high. In 3M Scotch Light adhesive film including rear door interior panels	
6.7		"AMBULANCE" writing on the front bonnet in a mirror image, reflective orange	
6.8	4	International Star of Life rescue emblems (Cross of Aesculapius)	
6.9			
6.10		Logos, dedications and liveries	
/		<p>Safety All the light components are made with highly efficient LED technology from the best brands. The siren kit is approved and dual-tone.</p>	

		HEALTHCARE SYSTEMS AND EQUIPMENT
	n.°	
	1	Inverter system 12v dc/220v ac –1300 watt 1300 WATT SME sinusoidal wave system, equipped with protection circuit for extra absorption, protection circuit for thermal runaway, heat sink. The control is carried out by the SINTEX 1 control unit with on-off button and safety magnetothermal switch.
		Initial start (duration 30") 2,900W Constant power 1,300W
	1	100 A/h auxiliary battery system 100 A/h auxiliary battery housed in a special arrangement under the driver's seat with its insertion circuit and switching relay that activates the insertion in parallel to the main battery with the engine running, allowing recharging by the alternator; with the engine off, it disconnects the main battery, allowing its charge status to be maintained for a start that is always ready and dedicates the auxiliary battery to powering the systems in the sanitary compartment. The system is also equipped with an electromechanical relay device with manual switching key to activate ignition via the auxiliary battery in the event of a failure of the engine battery. System equipped with automatic battery connection (service and primary) when the vehicle is turned on; after the vehicle is turned off, the primary and secondary batteries are disconnected, while the utilities in the sanitary compartment remain operational via the service battery
	1	No. 3 internal 220 V power sockets with safety circuit breaker + external waterproof socket compliant with EEC standards equipped with engine start-up prevention device with the socket inserted and protected with differential circuit breaker also acting on impulsive currents (s. 30 m a)
	1	Battery charging system 1 output + 1 maintenance mod. Dometic 152A Perfect Charge 15 amp. with automatic charge level regulator powered by external 220V socket, by inserting the external 220V socket the battery charger is powered which provides charging of the secondary battery and maintenance of the battery in the engine compartment.

