

DETECTION & LOCATION (57 ITEMS) CSSR EQUIPMENT

31. LIFE DETECTOR TYPE II

Qualitative Requirements	Picture of Equipment
	
1. The human Life Detection System will be used by Rescue Workers to determine, without risking lives by entering; whether anyone is trapped inside a burning or collapsed building. It should help to locate trapped or marooned victims in a disaster area, Reducing both search times and danger to rescuers and to find lost or injured people faster in hostile terrain, bad weather, collapsed trenches, even underwater. The system should have the discrimination capability for detecting only living human beings and not deceased humans or living animals. The principle of working is based on the equipment's capability of detecting living human beings by detecting the distinctive electro-magnetic field created by their heartbeat. This is achieved by use of the special hand held equipment. Required Capabilities and specifications 2. The instrument should be in full compliance with following specifications:- 1. It should be capable of passively detecting the presence of living humans behind thick barriers such as concrete walls, steel gates, trees, and 500 meters in the open air. It should be capable of passively detecting the non-uniform electric fields of living humans. It should not detect animal life. 2. Field of view: Horizontal plane: at least -2 to + 2 degrees Vertically plane: • At least - 60 to + 60 degrees in open air. • At least - 40 to + 40 degrees in composite structure . • - 20 to + 20 degrees on and all-metal grounded platform. • Detection range: It will come with two range adjustment devices (RADs) as follows: - All metal RAD up to 500 meters - Composite RAD up to 20 meters * Target tracking - in detection mode, once the Life detector has fixed on target, even if it is moving, the life detector will continue tracking the target. D) It will have a built - in Red laser (used to show direction in dark areas) and will be eye safe, the laser Environmental parameters for optimum performance will be:- 1. Operating temperature: -10 to + 45 degrees Celsius 2. Storage temperature : -40 to + 85 degrees Celsius * Instrument will be water resistant. (E) Power: (Internal)- rechargeable 8.4 V DC battery for the laser. Operating time: 3 hours in continuous operation. Charging time : 14 to 16 hours-charge should be provided.	

* Weight: < 1kg

* Hard carrying case or bag for accommodating the instrument will be provided.

(F) Instrument environmental parameters for optimum performance.

1. Operating temperature : - 40 to +85 degrees Celsius.

2. Storage temperature : - 40 to +85 degrees Celsius.

(G) The supplier will provide full training on the set to the user for a minimum of three days. This training will include on day in house classroom training on theoretical aspects including troubleshooting and maintenance and tow days of field training and techniques to ease detection.

SPECIFICATION FOR HUMAN LIFE DETECTOR TYPE-I



GENERAL:

Life detector a seismic/acoustic listening device, light weight and easy to carry, designed specially to detect and locate trapped, live victims in collapsed structures caused by earthquakes, explosion, landslides, construction cave-ins or mine disasters and should include the control unit, sensors, sensors spikes, connecting cables and spools, Magnetic Clamps, Headphones, intercom probe, AC power supply battery pack and carry bag (for control unit) with all required accessories.

The Life Detector should be provided with not less than 6 sensors. 4/6 sensors.

TECHNICAL SPECIFICATIONS

(F) MAIN UNIT

INPUT OF SENSOR/INTERCOM/PROBE

Seismic sensor input impedance : > 6K Ohms

Intercom probe input impedance: > 3 K Ohms

HEADSET OUTPUT

For headphones : 1/4" stereo jack

Output power, variable : 0.13 W/60 Ohms

FREQUENCY RANGE

1 Hz to 3000 Hz

FILTERS (FIXED SWITCH ABLE)

"Rumble" : High pass 100 Hz

"PWR" : Notch 50 Hz and 60 Hz

"Hiss" : Low pass 600 Hz

SIGNAL DISPLAY

LED Bar graph any 2 channels or sum of all channel, range 60 db.

(I) SESMIC/ ACCOUSTIC SENSOR (POSITION INSENSITIVE)

Frequency Range : 1 Hz to 300 Hz
Shock resistant : > 1000 g

(J) © POWER SUPPLY

Battery operated, low battery alert: Lithium ion rechargeable battery type". Appropriate perating time at approx. 20 deg.C:>20 hrs

Ext. DC Input : 10.8 to 28.8 VDC
AC/DC converter,
AC line frequency : 47 to 63 Hz
Nominal AC line voltage : 100 to 240 VAC

(K) AMBIENT TEMPERATURE

Storage and transport : -20 degree to + 70 degree C
Nominal operating range : -15 degree to + 60 degree or more.

Each system /life detector should contain following :-

- 1) Sensor spike - 6 Nos
- 2) Magnetic sensor clamp – 2 Nos
- 3) Lithium ion rechargeable battery stick -2 No s
- 4) Lithium ion battery stick charger 01 Nos
- 5) Power supply 01 Nos
- 6) Carry bag for Interface unit 01 Nos
- 7) lanyard strap 01 Nos
- 8) Cable connecter cap ,pack of 6 qty 01 Nos
- 9) Sensor connector cap 2 Nos
- 10) Operation/ maintenance manual 01 Nos
- 11) Case 01 Nos
- 12) Field operation guide 01 Nos
- 13) Life detector Display interface 01 Nos
- 14) Seismic sensor, #1,#2,#3,#4,#5,#6 all number sensor one each &
Acoustic sensor #1, 01 Nos
- 15) Head Phone with boom Mic 02 Nos
- 16) Sensor connecting cable 10 M on spool 6 Nos
- 17) Sensor Connecting cable ,3M 1 Nos.

Technical Specifications of Life Detector Type-I after updation

S/No	Technical Parameters	QRs/Specifications	Trial Directives
1.	General	Life detector a seismic/ acoustic listening device, light weight and easy to carry, designed specially to detect and locate trapped, live victims in collapsed structures caused by earthquakes, explosion, landslides, construction cave-ins or mine disasters and should include the control unit, sensors, sensors spikes, Magnetic Clamps, Headphones, intercom probe, AC power supply battery pack and carry bag (for control unit) with all required accessories. The Life Detector should be provided with not less than 6 seismic sensors (wired/wireless or combination of both) & 1 acoustic sensor (wired/wireless)	BOO to check and verify through certification provided by OEM.
Technical Specifications (Main Unit)			
2.	Input Of Sensor/ Intercom/Probe	i Seismic : > 6K Ohms sensor input impedance ii Intercom : > 3 K Ohms probe input impedance	BOO to check and verify the parameters through lab test reports from Govt./NABL approved labs.
3.	Headset Output	Headset :- Over the ear full size headphones with boom mic.	BOO to check and verify the parameter through lab test reports from Govt./NABL-approved labs.
4.	Frequency Range	1 Hz to 3000 Hz	BOO to check and verify the parameter through lab test reports from Govt./NABL-approved labs.
5.	Filters (Fixed Switchable)	i "Rumble" : High pass 100 Hz ii "PWR" : Notch 50 Hz and 60 Hz iii "Hiss" : Low pass 600 Hz	BOO to physically check the parameter and verify through lab test reports from Govt./NABL-approved labs.
6.	Signal Display	Digital/Analogue/LED display for sensors to assist in locating the victims.	BOO to physically check the parameter
7.	Seismic/ Acoustic Sensor (Position Insensitive)	i. Frequency Range: 1 Hz to 300 Hz ii. Shock resistant : > 1000 g	BOO to check and verify the parameter through lab test reports from Govt./NABL-approved labs.
8.	Power Supply	Battery-operated (Lithium ion/ commercially available).	BOO to physically check the parameter.



9.	Ambient Temperature	i Storage : 20 degrees to and + 70 degrees transport C ii Nominal : -15 degrees to operating + 60 degrees range or more	BOO to check and verify the parameter through lab test reports from Govt./NABL-approved labs/ OEM certificate
10.	Each System /Life Detector Should Contain Following	i. Sensor spike - 6 Nos ii. Lithium-ion Rechargeable battery (or commercially available batteries) iii. Lithium-ion battery charger- 01 Nos (if lithium ion battery provided) iv. Carry bag for Interface unit- 01 Nos v. Operation/ maintenance manual -01 Nos vi. Case- 01 Nos vii. Field operation guide -01 Nos viii. Life detector Display interface -01 Nos ix. 6 seismic sensors (wired/wireless or combination of both) & 1 acoustic sensor (wired/wireless) x. Head Phone with boom Mic- 02 Nos xi. Sensor connecting cables, sensor connector cap and cable connector caps (if wired sensors provided)	BOO to physically check and verify all the items.

