

LUNAR® Connected Device Bid Specification



I. Purpose

This specification establishes minimum standards for a personal accountability device including firefighter ranging, thermal imaging, associated battery charging systems, and supporting applications.

Ranging technology is a tool for firefighters and first response emergency personnel that is used for search and rescue of a crew member in distress.

Thermal imaging cameras are tools for firefighters and first response emergency personnel that are used for search and rescue, fire scene size-up, overhaul, location of victims, and advanced firefighting and first response applications.

II. Type

Devices covered by this specification shall be of the type incorporating 206 x 156 (32,136 pixels) thermal imager and 320 x 480 display resolution. TIC displays scene representations on 3.5" diagonal LCD display. Design is optimized for firefighters in ergonomic design and ease of incorporation with firefighting gear. TIC is further enhanced by rubber protective boot to provide additional protection from extremely harsh environments. The device shall be tested to the following specifications:

WATER/DUST INGRESS	International Standard CEI, IEC 529, IP67 Classification
DIRECT FLAME/HEAT EXPOSURE	Equivalent to NFPA 1801-2018 Edition, Section 8.7
RADIO FREQUENCY INTERFERENCE	IEC 61000-6-3, IEC 61000-6-2, FCC Part 15
NON-EXPLOSIVE RATING	ANSI/UL 12.12.01 (Class I, Div. 2, Groups C and D)
HIGH TEMPERATURE EXPOSURE	Equivalent to NFPA 1982 section 8.12
ELEVATED TEMPERATURE HEAT & FLAME RESISTANCE	Equivalent to NFPA 1981 section 8.29
HEAT IMMERSION LEAKAGE	Equivalent to NFPA 1981 section 8.24, NFPA 1982 section 8.5, NFPA 1802 section 8.3
TUMBLE	Equivalent to NFPA 1982 section 8.17
VIBRATION	Equivalent to NFPA 1982 section 8.9
IMPACT ACCELERATION RESISTANT TEST	Equivalent to NFPA 1801-2018 Edition, Section 8.3, 2 meter drop

III. Features & Subsystems

The product shall consist of the following features and subsystems.

- LUNAR/Personal Accountability System
- Motion Alarm
- Manual Alarm
- Hardware
- Bluetooth Enabled
- LTE Enabled
- F.A.S.T. Technology
- LUNAR-to-LUNAR Network (ad hoc network)
- Thermography measurement
- Visual Distance Indicator
- Visual Directional Indicator
- Twenty-three user-selectable color palettes
- FireGrid Monitor
- FireGrid Configure
- FireGrid Web-Based Platform

Components below are sold individually:

- Single-point charger
- Multi-bay charger
- Battery single pack
- Retractor assembly
- Rubber boot replacement
- Swivel quick disconnect

WHEN YOU GO IN, WE GO IN WITH YOU.



IV. Specific Requirements

1. LUNAR

DIMENSIONS	8.0" x 3.6" x 3.0", L x W x H (204 x 91 x 77 mm)
WEIGHT	1.5 lb. (660 g, without battery)
DISPLAY	Full color
DIAGONAL	3.5" (89 mm)
ACTIVE AREA	1.9" x 2.9" (49.0 x 73.4 mm)
SCREEN RESOLUTION	320 x 480
THERMAL IMAGE RESOLUTION	206 x 156 (32,136 pixels)
THERMAL IMAGE FRAME RATE	>16 Hz
SEARCH AND RESCUE	
RANGING TRANSMISSION POWER	FCC Regions: 20 dB ETSI Regions: 10/13 dB
DIRECTION INDICATION COMMUNICATION	Circular polarized directional antenna 2.4 GHz
CONNECTIVITY	
WIDE AREA	Cellular (LTE-M)
LOCAL AREA	LUNAR Local Alarm Network (self-contained), Bluetooth 5.1
LOCATION BASED SERVICES	GPS, GLONASS
DEGREE OF PROTECTION/INGRESS PROTECTION	IP67
CERTIFICATIONS	
US APPROVAL TYPE	Gas Class I, Gas Groups C, D, Division 2 – T3
CSA APPROVAL TYPE	Gas Class I, Gas Groups C, D, Division 2 – T3
INTRINSICALLY SAFE/ NONINCENDIVE EQUIPMENT	Class 1 Div 2

2. Rechargeable Battery Pack

BATTERY TYPE	Rechargeable lithium-ion battery pack
BATTERY LOCATION	External back
BATTERY WEIGHT	0.4 lb. (168 g)
OPERATING TIME	8 hours (normal use)
CHARGE TIME FOR DEPLETED	3 hours
CHARGE CYCLES	After 1000 charge cycles, the battery will be at approximately 80% capacity

3. Single-Point Battery Charger

FUNCTIONALITY	Stand-alone battery charger will charge 1 battery (installed or removed from device)
BATTERY CHARGE TIME	3 hours from depleted
POWER SUPPLY	110 V
LED INDICATORS	
RED	Charging
GREEN	Complete

4. Multi-Bay Battery Charger

FUNCTIONALITY	Stand-alone battery charger will charge 6 batteries simultaneously
BATTERY CHARGE TIME	3 hours from depleted
POWER SUPPLY	110 V
LED INDICATORS	
RED	Charging
GREEN	Complete

5. Attachments

SWIVEL QUICK DISCONNECT	Each LUNAR shall come equipped with 1 swivel quick disconnect for securing LUNAR to an SCBA or other gear
TETHER	Optional retractor for securing the LUNAR to a MSA G1 SCBA

6. F.A.S.T. Technology

RANGE	0.5 mile (0.8 km) line of sight
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7. LUNAR-to-LUNAR Network (ad hoc network)

INSTALLATION	Integrated inside LUNAR without add-on devices
FREQUENCY	2.4 GHz

8. Edge Detection

INSTALLATION	Integrated inside LUNAR without add-on devices
DEVICE	User-selectable palette

9. Operation and Instruction Manual

USER INSTRUCTIONS	Comprehensive manual includes all aspects of use, care, and maintenance
QUICK-START GUIDE	Easy reference document covers basic operation
VIDEOS	Online videos explaining use and maintenance

10. User-Selectable Palettes

INSTALLATION	Integrated inside LUNAR without add-on devices
DEVICE	User-selectable palette offers 23 options

11. Supporting Applications

SUPPORTING APPLICATIONS	FireGrid Monitor FireGrid Configure FireGrid Web-Based Platform
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Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice. MSA is a registered trademark of MSA Technology, LLC in the US, Europe, and other Countries. For all other trademarks visit <https://us.msasafety.com/Trademarks>.

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