TACSIGHT SE35 Thermal Imager
Bid Specifications

I. Warranty
The manufacturer shall warrant the Thermal Imager and all charging systems supplied with the Thermal Imager free of defects in material and workmanship, under normal use and service, for a period of one year effective upon delivery. In addition, the imager's outer shell or housing shall carry a limited lifetime warranty.

II. Service
The manufacturer must be located in the U.S.A. and provide a full-service repair center in the U.S.A. to ensure timely and efficient processing of any service related issues concerning the imager. Warranty repairs must carry a guaranteed 48-hour turnaround (two full business days) from the time of receipt at the service center to the time that the manufacturer ships the imager. Non-warranty repairs must carry a guaranteed 48-hour (two full business days) turnaround from the time the manufacturer receives purchase order authorization to complete the repairs to the time the manufacturer ships the imager. Upon request, the manufacturer must provide names and contact information from law enforcement agency references, verifying that the manufacturer complies with this requirement.

III. Quality
The manufacturer must ensure quality, design and manufacturing methods through third party certification to ISO 9001 or its equivalent. To ensure that the product is of the highest quality, documentation must be presented upon request illustrating a battery of tests that have been conducted to verify water resistance, heat resistance and shock/impact resistance.

IV. Physical Configuration
The imager shall be a hand-held design, having a 3.5-inch LCD display screen positioned to be viewed in line with the optics and easily viewed without having to be held to the user's eye, and two side straps (one on each side of the imager). Total weight of the imager shall not exceed 3.5 lbs. with the standard battery installed. The imager shall ship in a padded, hard shell case. The imager shall ship standard with two rechargeable batteries, a battery charger with AC and DC adapters and complete user instructions and warranty information. The imager's physical dimensions shall be no more than six (6) inches tall, five (5) inches wide and seven and a half (7.5) inches long. The imager must contain an integral threaded connector to mount on a standard tripod.

V. Durability
The imager shall remain operational after being subjected to water jets directed at the enclosure from any direction. It shall withstand a 1.5 meter drop in any orientation and sustain no operational damage. The manufacturer must perform these tests in front of designated department representatives at a mutually determined time and location. Failure to perform these tests in front of designated department representatives shall constitute non-compliance with this portion of the specification.

VI. Technology
The imaging technology shall be a 320x240, 35 micron pixel amorphous silicon microbolometer detector. The Noise Equivalent Temperature Difference (NETD) shall be less than 70 mK. To comply with recognized and accepted thermal imaging practices, the imager shall not provide surface temperature measurement. All thermal images must display only in black, white and shades of gray.

The imager must have a 2x and 4x digital zoom feature, as well as allow the user to choose the polarity of the display, alternating at the user's discretion between "white hot" and "black hot." The imager must also have a feature allowing the user to increase or decrease the detector's gain, which allows the user to generate the best image possible in low contrast environments.

VII. Outer Housing
The imager shall be ergonomically designed and the outer shell or housing must be manufactured from heat resistant Ultem® thermoplastic. Due to the likelihood of rigorous use, the Ultem must be molded with color pigment throughout to mask small surface scratches. Outer shells or housings that are painted or otherwise lack consistent color through their entire thickness are not acceptable.

VIII. Colors
The imager shall be provided in a uniform, all-black color.

IX. Monitor/Screen
The imager shall have a 3.5" diagonal backlit Liquid Crystal Display (LCD) screen. It shall have a minimum of 74,800 pixels for high quality resolution. In addition, a clear polycarbonate cover must protect the display screen. This cover must be field replaceable and watertight.

X. Lens
The imager shall possess a 35mm, f/1.0 lens fabricated of germanium and have a 10° x 13° field of view. The lens shall have a manually-adjusted, variable focus capable of producing a crisp image from 1.5 feet out to infinity.
XI. Visual Indicators
The imager shall have only one LED-indicator system to promote maximum ease-of-use. This indicator shall display battery life via three green, one yellow and one red LEDs. On-Screen battery indicators are unacceptable as they block otherwise visible areas of the display.

XII. Switches
To ensure maximum ease-of-use, the imager shall have only one switch to activate and deactivate the imager. The camera power switch must be recessed and protected to avoid accidental shut-off. The imager must have a second switch to control the display light intensity. The display control switch must be a three-position toggle switch to easily manipulate the display lighting between conditions of full-bright, dim, and full-off. The display control switch must allow full image wireless transmission to a remote display regardless of switch position.

Additional switches and/or buttons are permitted for the operation of special features, including digital zoom, polarity reversal and gain control.

XIII. Strap Systems
The side strap system must be field replaceable and shall be constructed primarily of Kevlar®. The side straps must be adjustable and must include a metal D-ring. An optional self-retracting strap must also be available for the imager. The self retracting strap must retract fully with the full weight of the imager (with battery) hanging unsupported from the strap.

XIV. Power Supply
A minimum of two (2) rechargeable batteries shall accompany each imager. Each battery shall be a 10-volt nickel metal hydride (NiMH) cell, providing a minimum of three hours of continuous use with all standard functions and features. The

battery shall have an Ultem outer shell. The battery shall eject from the imager only when two opposing battery release buttons are pressed simultaneously. The battery must be capable of being loaded into the housing only one way and must be easily inserted and removed by a person wearing standard duty gloves. A lithium ion battery is an unacceptable substitute for NiMH due to lithium's higher risk of explosion when exposed to high heat. An optional AA alkaline battery case must also be available for the imager. The case must load and secure into the imager in the same manner as the standard NiMH battery. The alkaline case must also be constructed from Ultem.

XV. Operation
The imager must be fully operational no more than 30 seconds after activating the power switch. The imager must not have a standby switch or mode.

XVI. Wireless Transmission
The manufacturer must offer the following receiver and recorder options:

A handheld, self-contained receiver/monitor system that uses the same batteries as the thermal imager. The handheld receiver/monitor system must operate for a minimum of two hours on the standard battery and must utilize a minimum 3.5" diagonal viewable display. The receiver must be equipped with video out capability and have a field replaceable display cover. The receiver must carry a one year warranty.

A digital image and video recorder (DVR), housed in an attachable handle, capable of recording five hours of video and 300 still images. Stored digital video shall download to the user's computer via USB 2.0 connection. Due to video file sizes, USB 1.0 is not acceptable due to its slower transfer speed. Video and image files shall by a minimum 640 x 480 resolution and incorporate time and date stamps on the recorded image. The DVR shall utilize "plug and play" technology so Windows PC operating systems automatically recognize and enable installation and setup of the software without need for an installation CD or other media. If so configured, the DVR shall work seamlessly with the transmission system and allow the user the ability to operate the transmitter and DVR separately or both simultaneously. The DVR must carry a one year warranty.

XVII. Battery Analysis and Conditioning
The manufacturer must offer an analyzer / conditioner system for use with the thermal imager's batteries. The hardware unit must utilize a PC software system that enables adding, naming, and removing batteries from a user's inventory. The software must be capable of automatically providing battery analysis and conditioning of up to four separate cycles to ensure optimal battery restoration. The hardware unit must be capable of conditioning up to four separate batteries simultaneously via multiple conditioning units or banks. The software must report analysis conclusions in simple English (i.e. "good" or "bad") for intuitive user understanding. The software must also be capable of notifying the user, via mobile text messaging or email, upon the completion of battery charging and/ or analysis / conditioning events. The unit must also be capable of separately charging a battery.

XVIII. Monocular Eyepiece
The manufacturer must offer a monocular eyepiece configured as a user installed attachment, interfacing with the same connection and in the same manner as the transmitter handle. The eyepiece shall require no additional external power or video source, drawing power and video directly from the camera. The eyepiece must incorporate a switch that enables user to switch the display on and off to ensure stealth.

XIV. Training
To provide adequate training for every fire department member, the manufacturer must make training available via the internet. This web-based training shall offer quizzes and final exams which, when passed, produce a printable certificate that can be kept in the department's files.

XV. Delivery
The manufacturer shall deliver the thermal imager in 45 days or less after receiving the purchase order.

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