

THERMAL IMAGING CAMERA SPECIFICATIONS

Intent of Specifications:

This specification covers a commercially produced Thermal Imaging Camera and its associated hardware and software. The Thermal Imaging Camera system (Camera) delivered to these specifications shall be a standard commercial product that meets the requirements of these specifications. Exceptions to any of the line items are not acceptable. Materials used in construction of the Thermal Imaging Camera system shall be new, unused, and not less than the quality conforming to modern engineering and manufacturing practices. Materials shall be free of defects and suitable for the service intended.

Specific Line Item Requirements:

Vendors must indicate compliance with these specifications on a line item basis by placing a check mark in the yes/no column corresponding to each line item. Bidders must furnish descriptive literature and complete manufacturer specifications with the submission of this documentation.

Quality Assurance:

The company manufacturing the Thermal Imaging Camera in response to this bid must furnish proof of current certification to the ISO9001-2008 quality standard.

Compliance Guarantee:

Vendors answering this bid must guarantee that equipment tendered comply with all parts of this specification.

The purchasing entity reserves the right to require the bidder to submit a sample of the equipment being tendered to the purchasing entity for validation and verification that all items claimed to be in compliance are in fact true and correct. If a bidder is requested to supply a sample of the equipment being tendered for testing, the equipment shall be supplied to, and received by, the purchasing entity within one week of notice. Inability to meet the timeline provided herein shall disqualify the bidder.

Components and Accessories Included with each Camera:

For each Camera provided, the following items shall be included at no extra charge: 1 Lanyard, 2 rechargeable batteries, 1 user manual, 1 carrying case, 1 charger and A/C power supply.

	COMPLIANCE	
	YES	NO
<u>Warranty:</u>		
a) The Camera shall be warranted by the manufacturer to be free of defects for a period of one year from the date of delivery.		
b) The manufacturer shall provide 48-hour turn-around time on warranty service work to the equipment in such a manner to return the Camera to the purchasing entity, in normal usable condition, within 72 hours, or to provide for the use of comparable equipment on loan until such time that the Camera is returned to the purchasing entity.		
c) The Camera shall be eligible for extended warranties, up to three years of coverage in total. Extended warranty contracts for the Camera shall be provided by the Camera's manufacturer. The warranty contract shall be eligible for purchase either at the time of original Camera purchase, or in one-year intervals after the initial purchase of the Camera.		
<u>Physical and Performance Specifications:</u>		
1. The Camera shall be capable of sensing, imaging, and displaying infrared radiation in the 8 to 14 micron spectral wavelengths and shall have been designed specifically for use within a firefighting environment.		
2. The Camera shall be hand-held and portable allowing it to be passed from one firefighter to another within a firefighting environment without removing any articles of personal protective equipment.		
3. In typical ambient temperature environments, when the Camera's on/off switch is activated to apply power to the Camera, the Camera shall render a usable thermal image in ten seconds or less.		
4. The Camera shall be equipped with an infrared imaging sensor consisting of no less than 110,592 imaging pixels.		
5. To facilitate imaging in extreme firefighting environments, the Camera shall have multiple operating sensitivities and shall be capable of providing clear distortion and saturation free images of scenes that include temperatures in excess of 2000°F degrees.		
6. The Camera shall be equipped with a Germanium Window protecting the optical lens. The window shall incorporate anti-reflective and hard carbon coating to minimize damage during operation.		

	COMPLIANCE	
	YES	NO
7. To facilitate high quality image representation, the Camera shall refresh the imaging sensor no less than 46 times per second.		
8. To ensure low cost of ownership, the Camera's infrared imaging engine technology shall be specifically designed for firefighting and shall be designed, developed, and manufactured by the same company who manufactures the finished Camera product.		
9. The Camera shall incorporate a hotspot tracking system that identifies and tracks the hottest object in the field of view and displays the temperature of the hottest object via an on-screen digital readout. Users shall have the option of turning the hotspot tracker on and off.		
10. The Camera shall be capable of incorporating a cold spot tracking system that identifies and tracks the coldest object in the field of view and displays the temperature of the coldest object via an on-screen digital readout. Users shall have the option of turning the cold spot tracker on and off		
11. The camera shall be capable of incorporating a freeze frame system which allows the user freeze the image on the display for a tactical analysis. The freeze frame system shall operate on a separate non-momentary button.		
12. The Camera shall incorporate screen layout, annotation and warnings as specified in NFPA 1801-2013.		
13. The Camera shall be resistant to vibration as specified in NFPA 1801-2013 Section 8, Vibration Test.		
14. The internal video signal shall be displayed on backlit 3½ inch LCD with an aspect ratio of 4:3 consistent with the Camera's sensor. The LCD display shall be capable of reproducing all of the sensor's pixels by incorporating a resolution of no less than 384X288 pixels.		
15. To ensure the waterproofing integrity of the Camera in all situations, the Camera shall be designed to isolate the internal electronic systems from all user accessible areas. The Camera shall conform to the IP67 standard, the ability to withstand short-term immersion in water to a depth of three feet.		
16. The Camera shall have the ability to withstand flame as specified in Section 8, Heat and Flame Test, NFPA 1801-2013.		

	COMPLIANCE	
	YES	NO
17. The Camera's dimensions shall be no more than 8 X 4.5 X 5 inches.		
18. The Camera, including battery, shall weigh no more than 2.2 pounds with the battery installed and have a total volume of no more than 128 cubic inches.		
19. The Camera shall be tested for resistance to impact as specified in NFPA 1801-2013, Impact-Acceleration Resistance Test.		
20. To eliminate confusion the Camera shall not incorporate a "sleep" mode that turns-off the Camera's internal LCD display while the Camera is "on".		
21. The battery level indicator shall also incorporate a low battery warning that, when used with a wireless transmission device, transmits the battery level information and low battery warning information to the receiver located remotely from the Camera.		
22. The Camera's rechargeable batteries shall be of lithium ion technology and shall be capable of operating the Camera (with the Camera's internal LCD display device ON) for a minimum of 3 hours.		
23. The Camera viewing surface, not including the optical lens, shall be tested for abrasion resistance as specified in NFPA 1801-2013 Viewing Surface Abrasion Test, and shall not have the viewing surface exhibit an average delta haze greater than 14 percent.		

	COMPLIANCE	
	YES	NO
24. The Camera shall have the ability to be upgradeable to incorporate the capability of saving video and still thermal images to on-board memory for download to a personal computer using a standard USB interface. When coupled to a personal computer using a USB interface, the computer shall recognize the Camera as an external memory source similar to an external disk drive. The video or image recording shall be activated and deactivated at will by the user without necessitating connection to a personal computer.		
25. The Camera shall be optionally equipped with wireless video transmitter that transmits in the 2.4 GHz band.		
26. The Camera shall incorporate through-the-lens direct temperature measurement capability that measures and displays relative surface temperature. The direct temperature measurement readings shall be displayed in numerical form in the lower right hand corner of the internal display device.		
27. The direct temperature measurement capability incorporated into the Camera shall be capable of measuring temperatures in excess of 2,000°F.		
28. The Camera shall be equipped with a detachable lanyard mounting system allowing the camera to be transferred from person to person without removing the lanyard.		
29. The Camera shall be equipped with a dual action locking mechanism to secure the battery in the Camera.		
30. The Camera shall be equipped with a built in laser pointer powered by the supply voltage from the Camera's battery.		
31. The Camera shall be equipped with an illuminating ON/OFF button indicating when the Camera is powered ON.		
32. The Camera shall be capable of viewing thermal images in bright sunlight and shall NOT incorporate LCD variable brightness. The camera shall not be equipped with an LCD display auto-dim/bright sensor.		
33. The Camera shall be tested for resistance to heat as specified in the Heat Resistance Test, NFPA 1801-2013, and shall withstand a minimum of 500F for 5 minutes.		
34. The Camera shall be tested for durability as specified in NFPA 1801-2013, Durability Test and withstand multiple 6 foot drops from multiple angles.		

	COMPLIANCE	
	YES	NO
35. The Camera shall optionally be equipped with a truck mounted charging system capable of concurrently charging a battery installed in the Camera, and an additional spare battery installed in the truck charging system. The truck charging system can also be used as a desktop station charger without the need of any additional power converters.		
36. The Camera's truck mounted charging system shall conform to the NFPA 1901, 2009 vibration & rollover requirements when mounted in vertical or horizontal position.		
37. The Camera's truck mounted charging system shall be equipped with a field replaceable strap to secure the Camera into the charging system.		
38. The Camera's truck mounted charging system shall be equipped with an in-line fuse to protect against power surges and cross polarity. The truck mounted charging system shall operate on 12V DC or 110V AC.		
39. The camera's truck mounted charging system shall be constructed on a 1/2 inch thick frame. The body of the truck charger system shall be made of thermoplastic with a 1/4 inch nominal thickness. The truck charger shall be the following dimensions: 8.5 X 8 X 5 inches.		
40. The Camera's truck mounted charging system shall have the option of a drive away detection system to prevent the user from leaving the camera behind. The system shall be powered from the charging system and contain a reset button to override the system when not in use.		
41. Purchasers of the Camera shall have the option of enrolling in a "battery for life" program to enable the purchaser a means to obtain refurbished and/or new batteries in replacement of defective batteries without incurring the cost purchasing new batteries.		