



Two Band Imaging System

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Market Study Deliverables

Conduct an abbreviated market study assessment to:

- Define the technology in common language as a priority for military and commercial applications.
- Create collateral material for industry outreach.
- Validate collateral material communication through primary and secondary research.

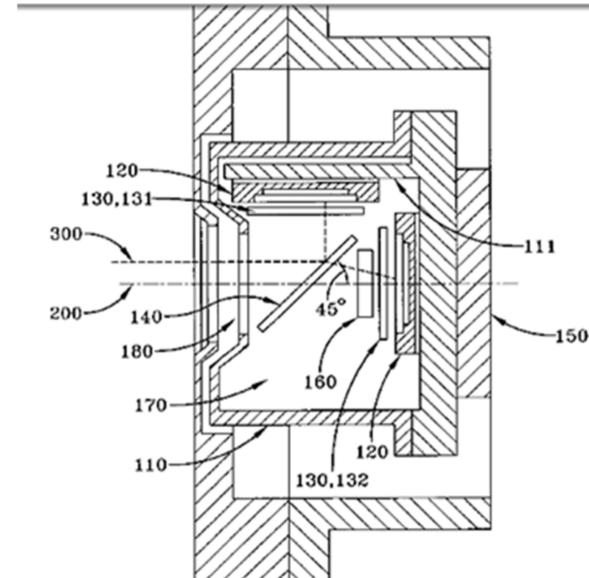
Technology Synopsis

Problem

Current technology limits the spectral bandwidth of any single focal plane sensor.

Solution

Allows simultaneous imaging of both radiance level and temperature enabling end-user to better differentiate the target from a decoy.



Market Opportunity

The infrared (IR) night vision imaging and thermography market: **\$4.8 billion annually,**

- \$3.3B is derived from pure military applications
- \$1.5B from commercial and dual-use applications

Situational Summary

Inventor: Eric Hillenbrand of the NAVSEA Crane Lab

Need: Enable the end-user to view simultaneous images of a common scene in real time and in great detail using multiple bands in both normal and cold temperatures.

- The technology has been used in the military.
- There are potential applications for this technology in the military, scientific, and commercial industries.

Potential Applications

Industry Segments	Uses	Market Size
A. Military*	1. Soldiers: Target identification and Recognition (Weapon Sight) 2. Soldiers: Missile Warning Systems	\$3.3B
B. Scientific**	Researchers: Research and Development Process	\$144.4B (2011)
C. Medical***	Physicians: Early Detection of abnormal health conditions	Millions of dollars per year
D. Manufacturing	Manufacturing companies: Spot/check for defects and issues within the manufacturing process	\$4.5T (2010)
E. Commercial	Thermographers: Diagnostics of engines including internal combustion, jet engines, and gas turbine	\$1.5B
F. Space	1. Satellites/Telescopes: Infrared images and spectroscopic observations of stellar phenomena 2. Meteorologists: To study the Earth's weather during both the day and night	\$257B

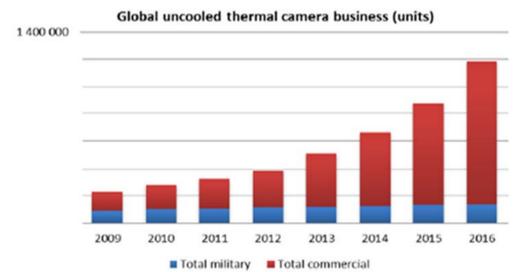
*Primary Market Focus
 **Secondary Market (Great potential for solving critical problems in the research and development process)
 ***Will require additional R&D

Competitive Advantage

The **only** technology able to:

- Use any band, sensor or focal plane
- Able to transform different images into a single image
- Able to effectively repress temperatures
- Distinct processor-Carry out super framing capability to image correlation

Uncooled Infrared Camera Market forecast



"Uncooled IR Cameras & Detectors for Thermography and Vision Markets—2010" projects that IR detectors will continue to drive down camera prices by 60%, 24% annual growth in unit demand, creating a \$3.4 billion market for IR cameras for vision enhancement and thermal sensing by 2015.

