The new FTI Mv medical thermal imaging system is designed specifically for a wide range of medical applications currently in use and to provide the detailed temperature information necessary to explore thermally the human body in the future.

The combination of an FTI Mv thermal imager with two precision, miniature blackbody temperature reference sources, provides unparalleled temperature measurement accuracy and repeatability with calibration traceability to National Standards.

TYPICAL APPLICATIONS
- Chiropractic clinical evaluations
- Determination of Reynauds Syndrome
- Blood flow through transplanted tissue
- Wound healing

The Problem
All radiometric thermal imaging cameras require onboard calibration data such as sensitivity, temperature and ambient drift for each of the individual detectors, each updating at frame rates of 25 per second and greater.

This level of complexity can compromise the repeatability and comparability of the calibration. Hence, a typical temperature measurement specification of +/-2% or 2°C being claimed by similar device manufacturers. In addition, calibration verification will require return of the imager to the manufacturer.

Introducing the most accurate thermal imaging system in the world

Land’s Solution
By combining the uniform 160 x 120 pixel infrared detector array of the FTI Mv thermal imager with two high stability P100i temperature reference sources, the complete imaging system can be calibrated within dedicated LIPS image processing software to provide actual temperature measurement at any point in the image scene.

This on-line calibration technique ensures a system accuracy of +/-0.5°C, and more importantly, gives repeatable temperature measurements down to 0.2°C, both traceable to ITS-90.

System calibration can also be verified using a platinum resistance thermometer (PRT).

This allows the imaging system to be used continuously whilst the PRT is returned to the calibration laboratory for calibration verification, while still providing the user with direct traceability to ITS-90.

This also eliminates the following issues affecting accurate temperature measurement:
- “Cold junction effects” - variations in the detector temperature relative to the target
- Lens transmission variations - lenses and windows can be exchanged without the need for re-calibration
- Cable losses - independence from length and type
- Frame grabber calibration - drift with temperature and time

see www.landinst.com for full contact details
**SPECIFICATIONS**

**FTI Mv Thermal Imager**
- Scene temperature range: 0 to 40°C/32 to 104°F
- Detector array format: 160 x 120 pixels
- Detector: Uncooled Microbolometer FPA
- Spectral response: 7 to 14µm
- Frame frequency: 30Hz
- Uncertainty
  - Accuracy: ±0.5°C to ITS-90
  - Repeatability: ±0.2°C to ITS-90
- Field of view: 17 x 12.8° (additional lens variants available on request)
- Minimum focus: 450mm/17.8in
- Power supply: 12V d.c., 3W
- IP rating: To IP50 (IP65 available using FTI Mini)
- Ambient operating temperature range: 0 to 55°C/32 to 131°F

**P100i Reference Source**
- Calibrated temperature range: 0 to 40°C
- Accuracy: <0.5°C or 1°F [to ITS 90]
- Stability: <0.2°C/0.4°F over ambient range 0 to 60°C/32 to 140°F

**Land Image Processing System**
Continuous or still image display and acquisition with radiance measurement at points, areas, profiles, histograms or isotherms for alarm output. Five palettes are available to aid scene interpretation.

**Standard System**
- FTI Mv thermal imager; UIB and RIB; bench power supplies (x2); LIPS Mini Image Processing Software;
- P100i temperature reference sources (x2); 15m video and communications cables

**Optional Accessories**
- Mechanical: Range of mounting accessories, Close-up lenses.
- Electrical: Desk-top PC and monitor; 19in rack mounted computer and monitor; LCD screen; alarm card;
  analog output card; digital input card.