

SAFT

Tester of measuring thermal imagers



Fig. 1. Photo of the SAFT measuring set

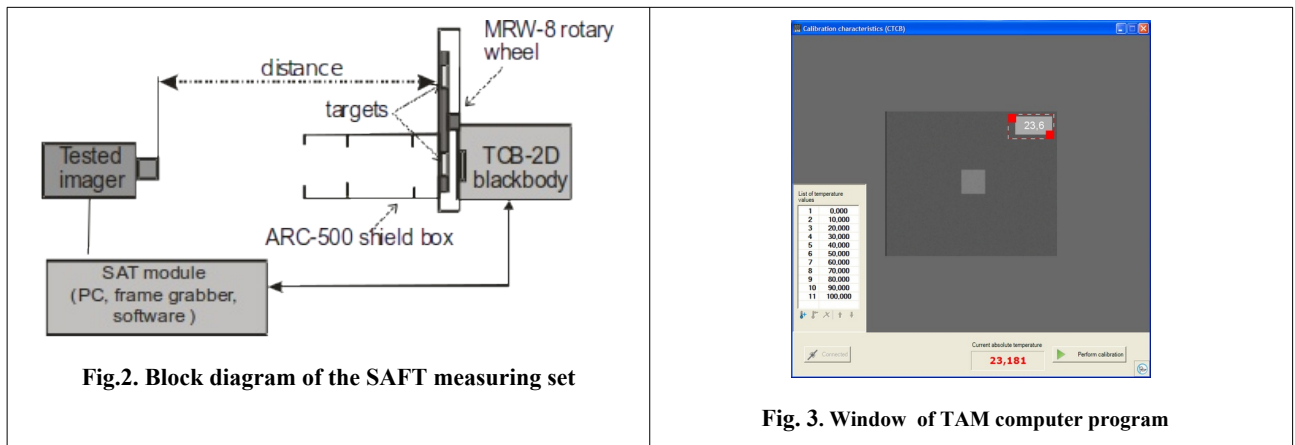


Fig.2. Block diagram of the SAFT measuring set

Fig. 3. Window of TAM computer program

Basic information

The SAFT measuring set is a small modular test system optimized for testing radiometric thermal cameras used for short range non contact temperature measurement. These are typically thermal imagers that can focus at distance no bigger than several meters. Great majority measuring (commercial) thermal imagers belong to this group.

SAFT system works as a variable target system that project images of the target directly to the tested thermal camera. The tested imager generates copies of the projected images. Quality of the images generated by the imager is evaluated by human observer of test software and its important characteristics are measured.

In detail, SAFT measuring set does not use a collimator for image projection because tested cameras can focus for short distances. Therefore SAFT is recommended for testing earlier mentioned group of thermal imagers built using using small focusable optics of wide FOV. If testing thermal imagers with bigger optics and narrow field of view is needed then additional collimator can be optionally delivered. Due to use of a series of targets fixed to the rotary wheel SAFT enables quick and easy measurement of a series of parameters of thermal imagers.

Test capabilities

SAFT can offer measurement of following parameters:

1. accuracy (equivalent Minimal Error),
2. NETD (equivalent Noise Generated Error),
3. SRF (Slit Response Function),
4. MRTD (Minimum Resolvable Temperature Difference).

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Measurement methods as in Krzysztof Chrzanowski, Testing thermal images, Military University of Technology, 2010 <https://www.inframet.com/Literature/Testing%20thermal%20imagers.pdf>

Typical SAFT measuring set is optimized for testing thermal imagers generating video image (NGE is calculated on basis of video sequence). However, thermal imagers capable to generate still images can be tested, too. In latter case NGE is calculated on a series of still images.

Options

Several options are offered to expand SAFT test capabilities:

1. Upgrading TCB-2D blackbody to HT version. This option enables testing performance of thermal imagers in expanded temperature range from 0°C to 180°C.
2. Additional MTB-2D blackbody of temperature range from 50 C to 550C. This option enables to test performance of thermal imagers in temperature range from 0°C to 550°C.
3. Additional CDT660HR collimator. This option enables long distance simulation and testing medium range thermal imagers of optics up to 60 mm (bigger collimators are possible too).
4. Additional edge target, FOV target and TAS-T10 software. This option enables to measure MTF and FOV of thermal imagers.

Detail technical data of TCB/MTB blackbodies (main modules of SAFT systems) are presented at Inframet website.

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