

# » WFOV Distortion Mapping Tester

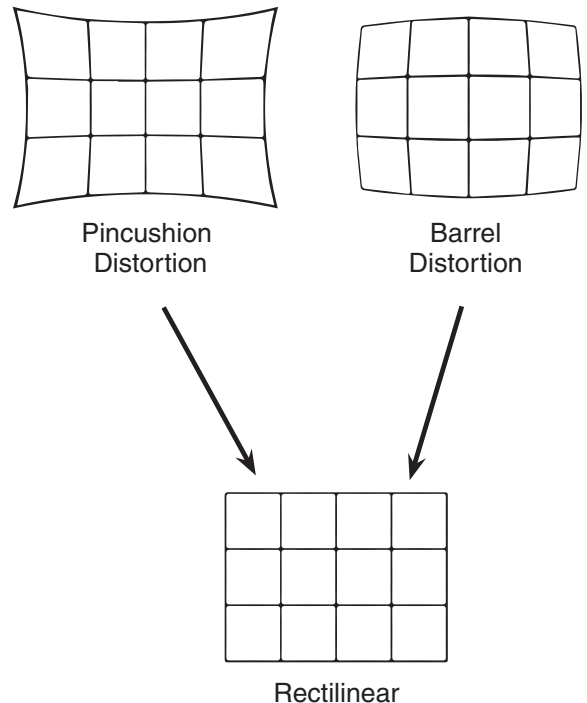
## Wide Field of View Collimator for Distortion Mapping

The **WFOV Distortion Mapping Tester** is an electro-optical test system for use by camera manufacturers to measure and map the distortion that dominates wide field of view (WFOV) cameras.

CI Systems offers three tester models for the Visible, SWIR and the LWIR spectrums.

The **WFOV Distortion Mapping Tester** was developed specifically for inline inspection of WFOV cameras. It can be integrated into production lines and may also be used as a stand-alone test setups.

This system is perfect for testing distortion, resolution and focus for various optical systems.



## » Principle of operation

The WFOV Distortion Mapping Tester is calibrated so that every pinhole is projected at a known angle relative to the central pinhole.

The positions of the projected pinholes are compared with their positions as they appear in the user's camera.

CI Systems' Computerized Test Executive Software Suite, CTE, then produces a correction table based on a proprietary algorithm for distortion mapping.

The WFOV Distortion Mapping Tester consists of:

- ▶ An optical collimator covering a wide field of view
- ▶ A light source (IR, SWIR or Visible)
- ▶ A target containing an array of pinholes
- ▶ CI Systems' CTE software with algorithm for distortion mapping.



Example for a projected target used for Distort

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## Wide Field of View Collimator for Distortion Mapping

### » Specifications

	WFOV Distortion Mapping Tester for:		
	Visible Range	SWIR Range	LWIR Range
Type of optics:	Refractive Element	Refractive Element	Refractive Element
Spectral band:	Visible range 0.4-0.65 $\mu\text{m}$	SWIR Range 1.4-1.7 $\mu\text{m}$	LWIR Range 8-12 $\mu\text{m}$
FOV:	45°	16°	45°
Focal length:	50 mm	100 mm	100 mm
Working distance (1)	40 $\pm$ 5 mm	100 $\pm$ 5 mm	80 $\pm$ 5 mm
Entrance pupil size:	4 mm	18 mm	16 mm
Operating temperature:	15-35°C	15-35°C	15-35°C
Source:	LED Backlight with Variable Light Control	CI-Systems' SR-300N Integrating Sphere System	CI-Systems' SR-800N Extended Area Blackbody

#### Notes:

(1) Distance from UUT entrance pupil to Collimator's front aperture



WFOV Distortion Mapping Tester for LWIR

Distribution in the UK & Ireland



**Characterisation,  
Measurement &  
Analysis**

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