

Product Datasheet - Technical Specifications



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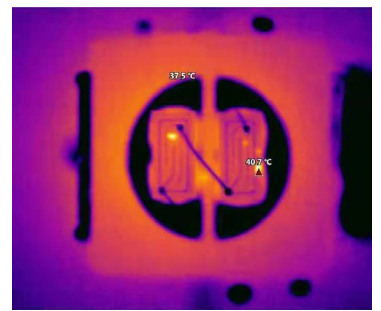
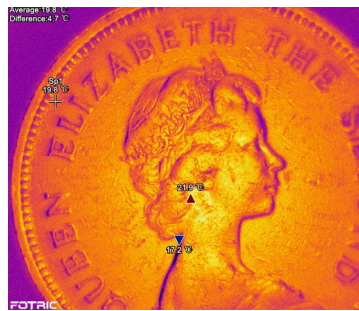
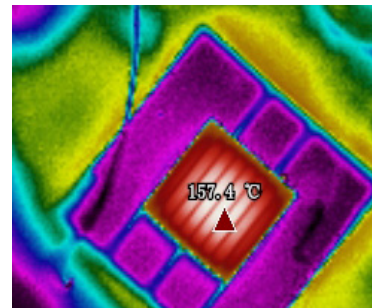
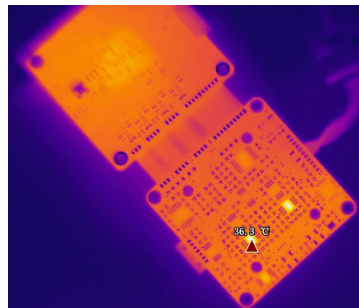
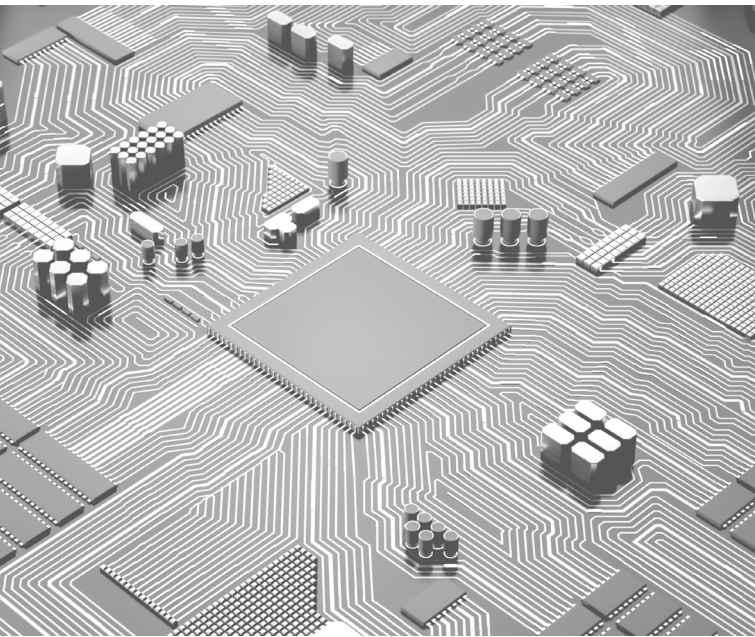
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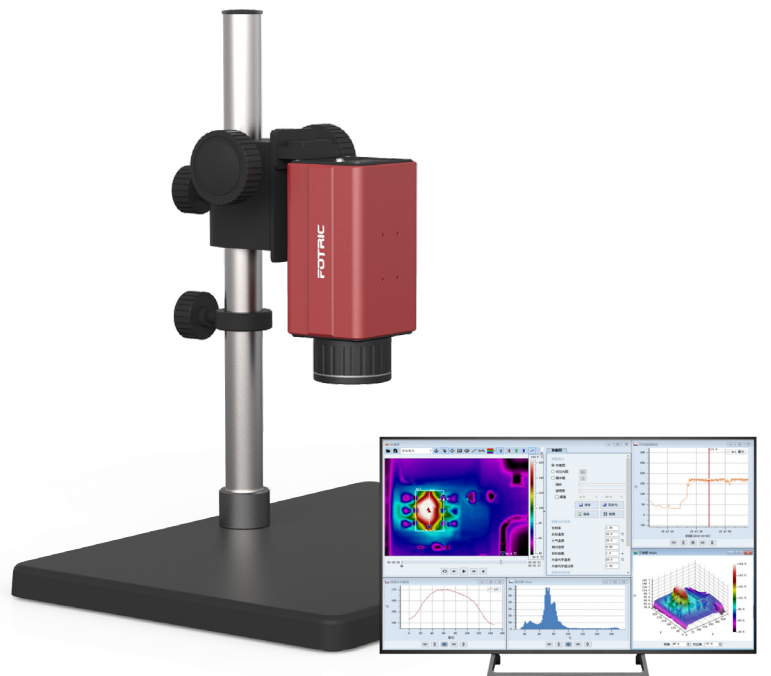
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FOTRIC 600_{R&D}

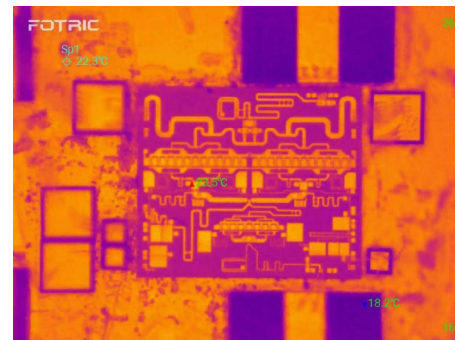
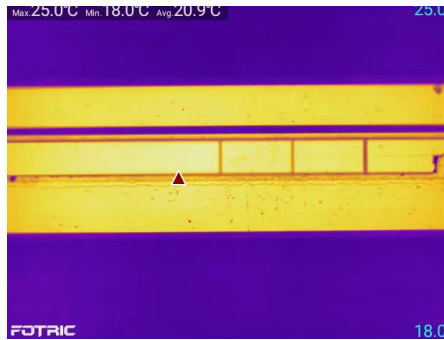
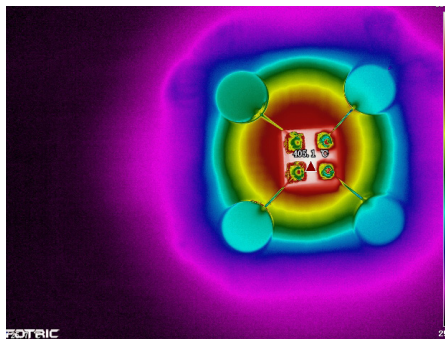


FOTRIC 600_{R&D}

The device adopts cutting-edge hardware including infrared detector, main processing chip, FPGA, power supply chip, etc., which guarantee the quality, performance and stability of the camera.

The thermal imaging camera can be equipped with standard lens for comprehensive overview, or with optional 20 μ m, 50 μ m or 100 μ m macro lenses to obtain temperature distribution and detailed data of microstructures such as chips.

The thermal imaging camera is equipped with a dedicated R&D test platform, allowing researchers to observe and analyze in a flexible, fine and stable manner.



World-class hardware

FOTRIC is committed to using the best hardware to make the best products.

Outstanding performance

FOTRIC 600 R&D's excellent hardware configuration, combined with extraordinary imaging algorithms, results in superior product performance.

- The infrared detector of up to 640*480 pixel provides a thermal map with over 300,000 temperature points as data matrix
- State of the art imaging algorithm significantly reduces noise and boosts image clarity
- Thermal sensitivity of up to 0.03°C , more sensitive to temperature change and makes more accurate temperature measurement
- High EMC compatibility, effectively prevent electromagnetic interference and electrostatic breakdown

Designed with R&D purposes in mind

FOTRIC 600 R&D is designed for education and research related applications. The simple and elegant design that makes operations intuitive and efficient.

- The test platform allows for easy lifting, rotation, fixation and other practical adjustment movements
- The macro lenses help users obtain thermal maps of microstructure temperature distribution and detailed temperature data
- Manual focus offers flexible and accurate focusing and fine thermogram acquisition.

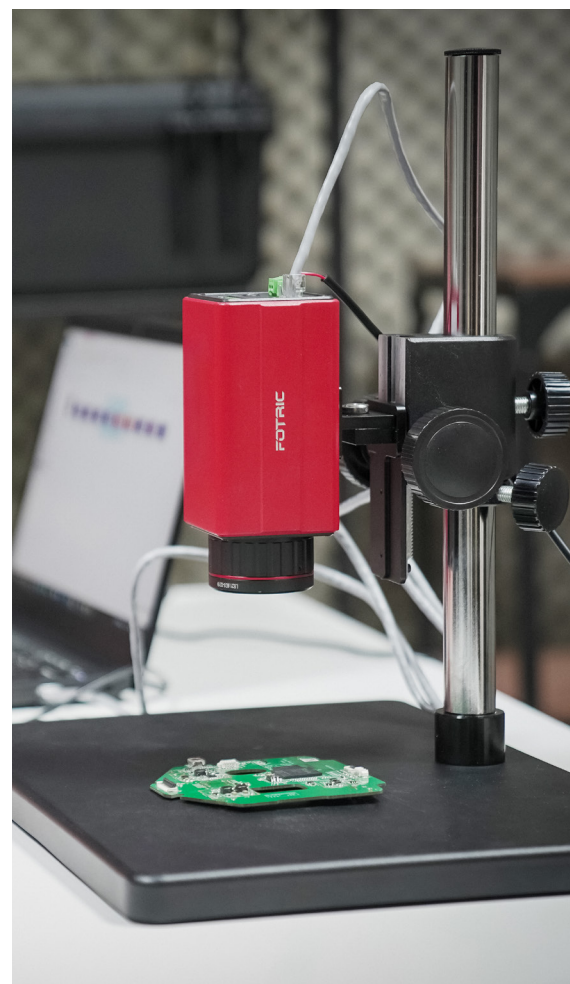
Powerful software support

AnalyzIR, thermal analysis software, is a professional thermal analysis software that matches the FOTRIC 600 R&D Thermal Camera.

The software allows the user to view temperature changes, overall distribution and other information, and to adjust the camera configuration.

AnalyzIR professional thermal analysis software allows the following functions to be implemented:

- Enables the camera to communicate with a PC to display, transmit, record, and analyze full radiometric video streams in real time
- Secondary analysis of the thermal image files, adding, deleting, renaming, moving measurement tools and adjusting the thermal image or full radiometric video
- Modification of the thermal parameters of the thermal image file, including emissivity, reflected temperature, atmospheric temperature, relative humidity, target distance, external optical transmittance, GPS location information, etc.
- Set partial emissivity for individual measurement tools to improve accuracy
- Display, export, save, and overlay time of temperature curves for any measurement tool
- Full radiometric thermal video supports both raw mode and temperature difference mode analysis
- The thermal image file supports histogram, 3D graph, and line temperature distribution display
- Combine thermal images into full-radiation thermal videos or split videos into images.
- Edit customized test report templates and batch process thermal image files. Batch generate of thermal image inspection reports.
- I/O external trigger recording.
- DB, TCP/IP Modbus, RS232 Modbus serial communication and data transfer with external systems.



Specification

Models	FOTRIC 618C R&D Station		FOTRIC 616C R&D Station	
Basic Parameters				
Infrared resolution	640*480		384*288	
Detector type	Uncooled infrared focal plane detector			
Thermal sensitivity (NETD)	< 0.03°C @30°C ,30mk		< 0.05°C @30°C ,50mk	
Infrared spectral band	7μm~14μm			
Standard lens	29° *22°		30° *22°	
IFOV	0.79mrad		1.36mrad	
Minimum focus distance	0.1m		0.15m	
Focal length	21.6mm		13mm	
Optional macro lens	M20	M50	M50	M100
Focal length	20mm	50mm	50mm	20mm
Image pixel size	20μm	50μm	50μm	100μm
Lens to object distance	12.8mm	66.3mm	45.2mm	110.6mm
Focus type	Manual			
Measurement Analysis				
Temperature Measurement Range	-20°C -150°C ; 0°C -650°C			
Accuracy	± 2°C or ± 2 %, whichever is greater (ambient temp between 15°C ~35°C)			
Measurement parameters	Emissivity; Ambient temperature; Reflected temperature; Relative humidity; Distance; External optics compensation			
Partial emissivity	Support			
Image Display				
Palettes	10 standard palettes and 10 inverted palettes			
Image process	Non-uniform calibration, digital enhancement			
Mirror mode	Left-right, up-down, center			
Video compression standard	H.264			
Radiometric stream	25Hz radiometric stream		30Hz radiometric stream	
Pan-tilt-zoom station compatibility	Support Pelco-D protocol			
Measurement tools	5 points, 10 lines and 10 regions, support Modbus output			
Software	AnalyzeIR			
Network Connection				
Ethernet type	10M/100M/1000M adaptive			
Simultaneous stream	Mainstream and substream: 10; Radiometric stream: 1			
IP connection interface	ONVIF			

Electrical Connection

Power connector	Screw-on wire terminal
Network connector	Screw-on RJ45 with status indicator LED
Serial port	RS-485 : 1 input 1 output
Alarm input/output	Relay: 1 input 1 output, load capacity: 24V, 1.5A Optocoupler: 1 input(5~15mA) 1 output(<35mA) 1 GND, Voltage: 3.3-24V

Power System

Power supply	12V/24V DC, PoE	
Power consumption	4W	3W

Reliability and Certificates

Safety standards	GB 4943.1-2011 EN 62368-1:2014+A11:2017; GB/T 19870-2018
Electromagnetic compatibility	GB/T 18268.1-2010 EN 61326-1:2013 GB 17625.1-2012 EN IEC 61000-3-2:2019 GB/T 17625.2-2007 EN 61000-3-3:2013/A1:2019 GB/T 19870-2018 GB 4824-2019 EN 55032:2015/A11:2020 EN 55035:2017 FCC CFR47 Part15 subpart B
Protection level	IP40
Impact	25g, GB/T 2423.5-2019 IEC 60068-2-27:2008
Vibration	2g, GB/T 2423.10-2008 IEC 60068-2-6:2007
RoHS compliant	Directive 2011/65/EU and amendment (EU) 2015/863

Physical Parameters

Working temperature	-20°C -65°C
Storage temperature	-40°C -70°C
Relative humidity	< 90%
Size	112mm*68mm*60mm (without lens or base)



Whole package of 600 R&D camera and test bench