

Fotric P5MiX Datasheet

■ Specifications

Thermal Image Basic Parameters	
Infrared Resolution	384*288
Super Resolution (SR)	Enhanced to 768×576
Detector Type	Uncooled Infrared Focal Plane Detector
Thermal Sensitivity (NETD)	<40mK@30°C
Pixel Pitch	17μm
Spectral Response Range	8~14μm
Image Frame Rate	30Hz
Field of View (FOV)	25°*19°
Spatial Resolution (IFOV)	1.14mrad
Minimum Imaging Distance	0.1m
Focal length	15mm
Focusing Method	Autofocus, manual focus.
Lens Recognition	Automatic recognition.
Optional Lens	Refer to "Lens Parameters"
Acoustic Image Basic Parameters	
Microphone channels	140 MEMS digital microphones
Acoustic image field of view (FOV)	66° * 52°
Sound pressure sensitivity	0.01L/min@0.1MPa,1.4m,φ30μm orifice 0.025L/min@0.3MPa,6.5m,φ30μm orifice 0.045L/min@0.3MPa,7.5m,φ40μm orifice
Measured sound pressure range	10kHz:6~120dB SPL 15kHz:-3~120dB SPL 20kHz:-7~120dB SPL 25kHz:-13~120dB SPL 30kHz:-4~120dB SPL 35kHz:8~120dB SPL 40kHz:5~120dB SPL 45kHz:-2~120dB SPL 50kHz:-5~120dB SPL 55kHz:-2~120dB SPL 60kHz:3~120dB SPL 65kHz:2~120dB SPL 70kHz:8~120dB SPL 75kHz:7~120dB SPL
Sound sampling rate	200kHz
Acoustic refresh rate	25Hz
Working distance	0.3–100m
Thermal Image Measurement Analysis	
Temperature Measurement Range	-20~650°C
Temperature Span	-20~120°C,0~650°C,intelligent range
Temperature Range Extension	Supports -40°C low-temperature extension, supports 1550°C high-temperature extension
Temperature Measurement Accuracy	±2°C or 2%, whichever is greater

Temperature Measurement Spot	10
Temperature Measurement Line	6
Temperature Measurement Box	10
Line Temperature Distribution	Support viewing line temperature distribution chart.
Global Temperature Correction	Support temperature measurement parameter correction: emissivity, ambient temperature, reflected temperature, relative humidity, target distance, infrared window parameters(temperature and transmittance) .
Local Parameters	Support emissivity correction for temperature measurement areas.
Area Alarm	Supports high/low temperature alarms for max/min temperature in measurement areas
Temperature Rise Function	Reference temperature can be the highest, lowest, average, or custom temperature in the measurement area
On-device Analysis	The device is capable of directly analyzing thermal images and full radiometric videos
Analysis software	AnalyzIR professional thermal imaging and acoustic imaging analysis software
Acoustic Image Measurement Analysis	
Positioning frequency range	2–100kHz
Frequency range selection	Support pre-configured frequency ranges for different scenarios, and selection of appropriate frequency range afterward Support manual adjustment of frequency bands
Measurement Spot	2
Measurement Area	2
Detection mode	Leak mode: displays leak level on the device Partial discharge mode: displays PRPD graph on the device, compatible with different AC frequencies (50/60Hz)
Acoustic focusing	Shield surrounding areas, focus only on the area of interest for the acoustic image
On-device Analysis	The device is capable of directly analyzing acoustic images and holographic acoustic videos
Analysis software	AnalyzIR professional thermal imaging and acoustic imaging analysis software
Leak evaluation	Automatically identify leak points and evaluate leakage volume and annual energy cost
Partial discharge diagnosis	Automatically diagnose surface discharge, floating discharge, corona discharge, and their severity
Image display	
Display screen	5-inch, 1280*720 pixels, IPS LCD touch display with Gorilla Glass explosion-proof cover
Thermal Image Display	
MiX Mode	Simultaneous display of thermal and acoustic images.
Image mode	Blend(T-DEF®) mode, and Picture-in-Picture mode, digital camera; Blend(T-DEF®) mode and Picture-in-Picture mode is only available with alignable lens;
Blend Mode(T-DEF®)	Adjustable infrared image transparency from 0% to 100% in blend mode.

Picture-in-Picture	Overlay a movable and resizable thermal image on the visible light image
Palette	Supports 16 color palettes: Iron, Grey, Iron10, Rainbow, Grey10, GreyRed, MidGrey, Yellow, Rain, Rain10, Blue, GlowBow, Medical, MidGreen, Prism, Medical10 Supports real-time preview and switching of color palettes
Inverted Palette	Support inverted palettes.
Span Mode	Supports automatic adjustment of temperature span Supports manual adjustment of temperature span (minimum 2°C) Supports touch adjustment of temperature span (minimum 2°C)
Color Alarm	Supports color alarms for above, below, and between temperatures
Image overlay information	Display global maximum temperature, minimum temperature, ROI maximum temperature, minimum temperature, average temperature, emissivity, temperature measurement parameters, lens, compass information, as well as date and time information.
High/Low Temperature Tracking	Automatically tracks the highest and lowest temperature points within a marked measurement area
Image Detail Enhancement (IREdge)	Supports IREdge infrared image contour enhancement
Normalized Histogram Color Distribution(T-TWB®)	Optimize display of images with large dynamic range to show more details
Digital zoom	1~16x continuous zoom
Acoust Image Display	
Signal Source Mode	Single sound source, multiple sound sources, holographic modes
Single sound source	Overlay the acoustic image of the strongest sound pressure region on the visible light image
Multiple sound sources	Overlay the acoustic images of multiple strong sound pressure regions on the visible light image
Holography	Adjust the sound pressure threshold and overlay the acoustic image of areas above the threshold on the visible light image
Palette	Support 3 color palettes: Red-Blue, Iron, Grey Supports transparency adjustment
Black-and-white background	Visible light image displayed in black-and-white grayscale
Image overlay information	Displays leakage level and evaluation result, PRPD spectrum and partial discharge diagnosis result, measurement parameters (AC frequency, sound source type, target distance), compass information, and date and time information
Sound pressure tracking	Automatically track the maximum sound pressure with special marking
Acoustic image delay (T-FFTD®)	Capture instantaneous sound signals and allow them to remain longer in the real-time acoustic image
Digital zoom	1–4x continuous zoom
Imaging function	
Digital camera	Digital camera next to infrared camera: 5 million pixels, industrial-grade digital camera. Digital camera on acoustic camera: 13 million pixels, industrial-grade digital camera.
Storage card	SD card, hot-swappable, supports up to 1TB

Single-frame capture	In thermal image mode, blend(T-DEF®) mode, and Picture-in-Picture mode: the image is saved as an analyzable thermal image; The image is saved as a digital camera image in digital camera mode; When the lens is recognized as an alignable lens, the thermal image in thermal image mode, blend (T-DEF®) mode, and picture-in-picture mode includes a aligned digital camera image; In single sound source, multiple sound source, and hologram modes, the image is saved as an analyzable acoustic image.
Panorama	In thermal image mode, save multiple thermal images as a single panoramic thermal image for analysis
Radiometric Video Recording	Support for recording analyzable radiometric videos in thermal image mode Radiometric video recording is not supported in MiX mode
Holographic Acoustic Image Video Recording	Supports recording of holographic acoustic videos for analysis Not supported in MiX mode
MP4 Video Recording	Support for various thermal image modes and MP4 video recording in all acoustic image source modes
Image format	jpg (thermal image), jpg (acoustic image), jpg (visible light image)
Video Format	Supports irs or irsx (radiometric video), acs (holographic video), MP4
Freeze Interface	In thermal image, blend(T-DEF®), and picture-in-picture modes, as well as in single-source, multi-source, and holographic acoustic modes, support for single-frame capture with preview freeze enabled
QR Code Functionality	Supports scanning QR codes and barcodes as text annotations and tags.
Voice Annotation	Records voice for up to 120 seconds, saved in thermal images, acoustic images, full-radiometric videos, and holographic acoustic videos
Text Annotation	Input text via soft keyboard, save to thermal images, acoustic images, full radiometric videos, and holographic acoustic videos
Tag Table	For each row in the Tag Table, input text via drop-down list or soft keyboard, save to thermal images, acoustic images, radiometric videos, and holographic acoustic videos; later, filter by tag content in the gallery
Favorites	Click the favorite button to save the favorite status to thermal images, acoustic images, full-radiometric videos, and holographic acoustic videos, highlighted in the gallery preview screen, and later filter by favorite status in the gallery.
On-device gallery	Supports viewing images, videos, and reports in the gallery by icon. Supports preview of images, videos, and reports in the gallery. Supports analysis of thermal images, radiometric videos, acoustic images, and holographic acoustic videos in the gallery. Supports filtering and deleting images, videos, and reports in the gallery.
On-device Report	Supports generating Word or PDF reports
Data connectivity	
WiFi Connection	Supports 2.4GHz and 5GHz frequency bands, supports 802.11a/b/g/n/ac
Bluetooth	BT4.2 LE, can be connected to Bluetooth headphones
USB interface	USB Type-C, compliant with USB 3.0/2.0 standard

HDMI Interface	Micro HDMI type, compliant with HDMI 1.4 specifications, supports transmission of 1080P images/videos at 60Hz
FTP Fast Transfer	Connect to the device via WiFi network or device's own WiFi hotspot, then access local data via FTP
PC Radiometric Video Stream	Real-time analysis of full radiometric video stream via AnalyzIR
Remote Display	View full radiometric video stream via USB Type-C interface connected to AnalyzIR, or connect to display screen or projector via HDMI interface
Remote Control	
PC Remote Control	Supports installing AnalyzIR on Windows systems for real-time data analysis and viewing and analyzing captured and recorded data.
Mobile Control	Supports installing EasyIR on Android systems to preview device screens, synchronize device data, and view, browse, share, and analyze synchronized data.
Web Browser Remote Control	Remote operation and control via built-in browser on devices such as smartphones, computers, tablets, to access, analyze, and share local data
Auxiliary functions	
Software and firmware upgrades	Supports OTA remote upgrade and SD card local upgrade
TurboFocus®	Supports smart focus system with contrast focus, laser focus, continuous focus, and touch focus.
Touch Focus	Auto-focus on the target area within the visible region of the thermal image when no menu or image overlay information is activated by touch control.
Laser	Laser: Class 2, wavelength: 635nm, power: <1mW. Laser ranging: 0.1m-50m, accuracy: $\pm 0.01\%$ ±2mm.
ROI Supplement Parameters	Support measurement of temperature line length, support measurement of rectangular and circular area of measurement area.
Geographical Location	Support Beidou/GPS/GLONASS satellite positioning, location information can be saved to thermal images, acoustic images, full-radiometric videos, and holographic acoustic videos.
Compass	Supports 360° orientation, image overlay information can display orientation information, and orientation information can be saved in thermal images, acoustic images, full-radiometric videos, and holographic acoustic videos
LED illumination lamp	Support flashlight illumination and flash mode
HawkAI	Text recognition.
Unique Features	
MagicThermal®	AI identifies target feature areas, uses a temperature measurement frame (fits the target feature area contour) to select the area, and saves the temperature measurement frame information to the thermal image. The temperature measurement frame does not support on-device movement and fine adjustment, but supports editing in PC analysis software
Power system	
Battery type	3.6V, 9900mAh Rechargeable Lithium Battery, Field-Replaceable
Battery operating time	Continuous Operating Time ≥ 4 Hours (Actual runtime depends on environment and usage conditions)
Charging method	Supports charging via dock charger, direct DC 12V charging, and USB charging while powered off

Charging time	Charge up to 90% in 3 hours
Energy management	Auto shutdown, manual screen off
External power supply	Supports using DC 12V power supply for the device
Reliability and certification	
Safety standards	GB 4793.1/EN 61010-1
Electromagnetic compatibility	GB/T 18268.1/EN IEC 61326-1
Protection rating	IP54(GB/T 4208/IEC 60529)
Shock resistance	25g(GB/T 2423.5/IEC 60068-2-27)
Vibration resistance	2g(GB/T 2423.10/IEC 60068-2-6)
RoHS Directive	Compliant
Physical parameters	
Operating temperature	-20~50°C
Storage temperature	-40~70°C, without battery
Relative humidity	<95%RH
Dimensions	190mm*181mm*99mm
Weight	1.6kg(Excluding lens)
Battery weight	210g
Housing material	Hard plastic: PC+ABS, soft rubber: TPE, magnesium alloy, aluminum alloy
Mounting Method	Support tripod connection with UNC 1/4-20 interface
Warranty and maintenance	
Warranty period	2-year warranty for the whole unit
Recommended calibration interval	Thermal Imaging: 2 years, Acoustic Imaging: 2 years
Supported languages	
Supported languages	English, German, French, Spanish, Portuguese, Italian, Japanese, Korean, Traditional Chinese, Thai
Standard product configuration	
Standard configuration	Main unit ×1□Rechargeable Lithium Battery*3□Charging Dock□Power Adapter□USB Type-C to USB cable ×1□Micro HDMI to HDMI Interface Cable□128G SD Card□SD Card Reader□Neck Strap□Calibration certificate□Quick start guide□Packing list□Hard Carrying Case

■ Lens

● Optional

L e n s	Lens Parameters				
	Field of View (FOV)	Spatial Resolution (IFOV)	Minimum Imaging Distance	Minimum Registration Distance	Focal length
					Temperature Span
L25	25°*19°	1.14 mrad	0.1 m	0.5 m	15 m
L46	46°*35°	2.09 mrad	0.1 m	0.7 m	14 m
L46	46°*35°	2.09 mrad	0.1 m	0.7 m	8 m
L12	12°*9°	0.55 mrad	0.25 m	1 m	25 m
L07	7°*5°	0.32 mrad	1 m	2 m	51 m

M50	19.2 mm* 14.4 mm	50 μm	9 / 8 mm (M)	2 / 8 mm (M)	-20~120°C, 0~650°C (measurement accuracy above 400°C not guaranteed, calibrated at 0.1 m)
M100	38.4 mm* 28.8 mm	100 μm	1 / 5 mm (M)	2 / 5 mm (M)	-20~120°C, 0~650°C (measurement accuracy above 400°C not guaranteed, calibrated at 0.15 m)
L25/L12	25°* 19°\12°* 9°	1.14 mrad 0.55 rad	0.25 m 0.8 m 1 m	1 / 5 mm 3 / 1 mm 1 m	-20~120°C, 0~650°C (calibrated at 1 m / 1.5 m)

● Temperature Range Extension

Lens	Temperature Range Extension	
	-40°C	1550°C
L25	Supported	Supported
L46	Supported	Supported
L46	Supported	Supported
L12	Supported	Supported
L07	Supported	Not supported
M50	Not supported	Not supported
M100	Not supported	Not supported
L25/L12	Not supported	Not supported

■ Available Models

A251627-B001 Fotric P5MiX-L25-L25/L12
 A251627-B024 Fotric P5MiX-L25
 A251627-B002 Fotric P5MiX-L25-L25/L12-L46
 A251627-B025 Fotric P5MiX-L25/L12
 A251627-B003 Fotric P5MiX-L12
 A251627-B026 Fotric P5MiX-L25-L07
 A251627-B027 Fotric P5MiX-L25-L12-L07
 A251627-B004 Fotric P5MiX-L25-L12
 A251627-B028 Fotric P5MiX-L46
 A251627-B005 Fotric P5MiX-L25/L12-L12
 A251627-B029 Fotric P5MiX-L25-L46
 A251627-B006 Fotric P5MiX-L25-L25/L12-L12
 A251627-B007 Fotric P5MiX-L25/L12-L07
 A251627-B030 Fotric P5MiX-L25/L12-L46
 A251627-B008 Fotric P5MiX-L25-L25/L12-L07

A251627-B009 Fotric P5MiX-L25/L12-M50
 A251627-B010 Fotric P5MiX-L25-L25/L12-M50
 A251627-B011 Fotric P5MiX-L46-L12
 A251627-B012 Fotric P5MiX-L25/L12-L46-L12
 A251627-B013 Fotric P5MiX-L25/L12-L46-L07
 A251627-B014 Fotric P5MiX-L46-M50
 A251627-B015 Fotric P5MiX-L25/L12-L46-M50
 A251627-B016 Fotric P5MiX-L12-L07
 A251627-B017 Fotric P5MiX-L12-M50
 A251627-B018 Fotric P5MiX-L07-M50
 A251627-B019 Fotric P5MiX-L46-L12-L07
 A251627-B020 Fotric P5MiX-L46-L12-M50
 A251627-B021 Fotric P5MiX-L46-L07-M50
 A251627-B022 Fotric P5MiX-L12-L07-M50
 A251627-B023 Fotric P5MiX-L46-L12-L07-M50

* For additional configurations, please contact us directly.

■ Accessories

● Optional

C251235 Rechargeable Lithium Battery
 C251343 Charging Dock
 C251240 Power Adapter
 C251449 Car Charger
 C251249 Test Bench
 C251332 Portable Soft Bag
 C251340 Hard Carrying Case
 C251303 L46 Lens
 C251425 L25 Lens
 C251325 L46 Lens
 C251321 L12 Lens
 C251364 L07 Lens
 C251427 L25/L12 Lens
 C251370 M50 Lens
 C251426 M100 Lens
 C251261 -40°C Low Temperature Expansion
 C251436 1550°C High Temperature Expansion
 C251450 Temperature calibration service □ ≤700°C □ each temperature range □
 C251451 Temperature calibration service (>700°C, each temperature range)
 D251036 NaviPdM Venus

