Sonel®

Contactless
temperature
measurements

Comparison
of thermal imagers
and IR thermometers

Sonel KT/DIT

Meet the family of thermal imagers and IR thermometers by SONEL S.A.

Thermal imagers

Sonel KT-128
Sonel KT-200 / 400
Sonel KT-560 / 650 / 670
Sonel KT-120M, KT-560M, KT-800M

IR thermometers

Sonel DIT-120 / 200
Sonel DIT-130 / 500

comparison of measurement ranges

THERMAL IMAGERS

BODY TEMPERATURE MEASUREMENTS
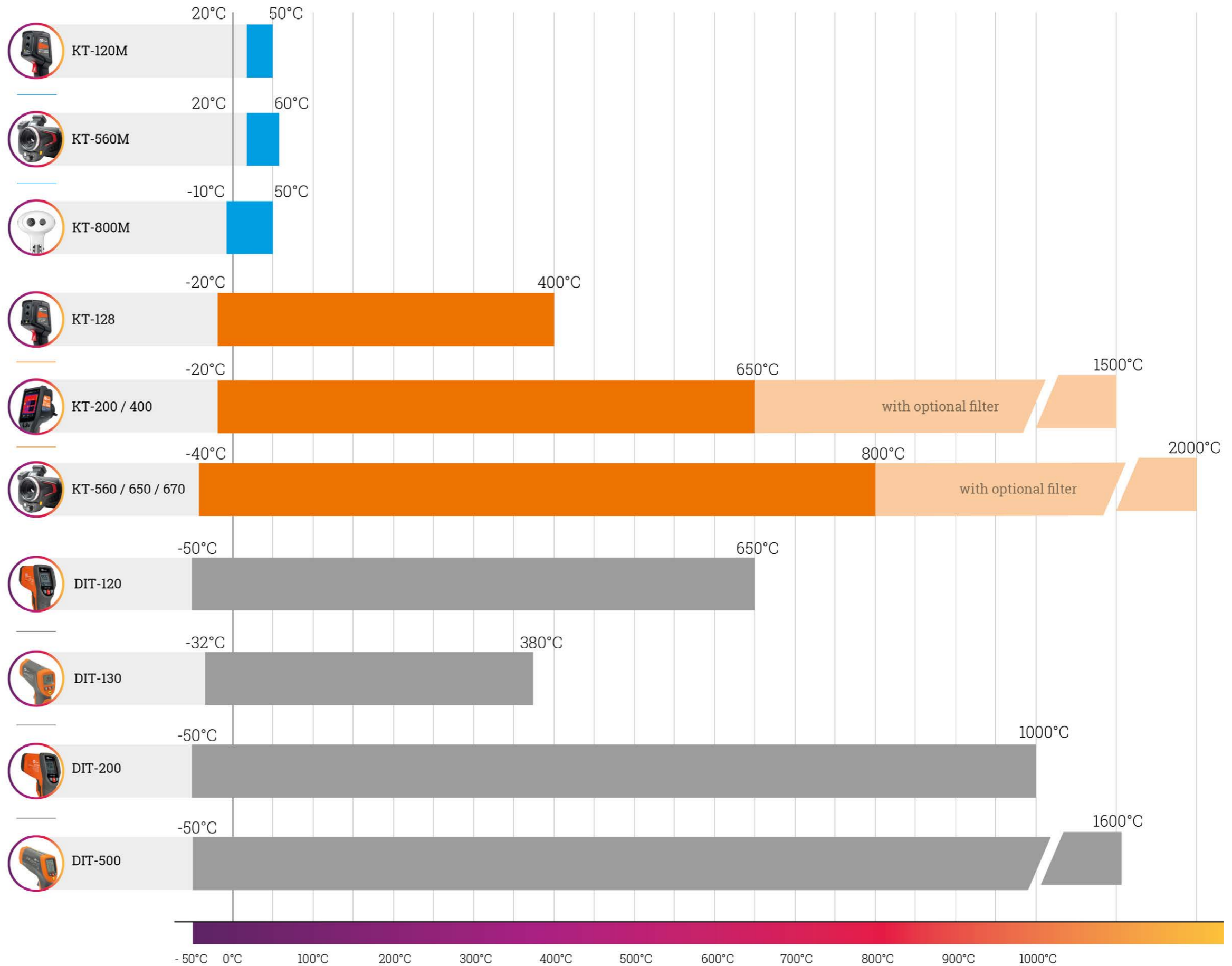» the highest accuracy
» narrow range

Device	Range
KT-120M	20°C – 50°C
KT-560M	20°C – 60°C
KT-800M	-10°C – 50°C

INDUSTRIAL APPLICATION
» high accuracy
» wide range

Device	Range
KT-128	-20°C – 400°C
KT-200 / 400	-20°C – 650°C (with optional filter up to 1500°C)
KT-560 / 650 / 670	-40°C – 800°C (with optional filter up to 2000°C)

IR THERMOMETERS

INDUSTRIAL APPLICATION
» high accuracy
» wide range

Device	Range
DIT-120	-50°C – 650°C
DIT-130	-32°C – 380°C
DIT-200	-50°C – 1000°C
DIT-500	-50°C – 1600°C

Temperature scale: -50°C 0°C 100°C 200°C 300°C 400°C 500°C 600°C 700°C 800°C 900°C 1000°C

measure

Infrared temperature meters are used to determine the temperature of the test object. The device detects the emission of radiation and measures its intensity. The electronic system transforms the collected data into a temperature value. To increase measurement precision, some devices are equipped with a laser pointer.
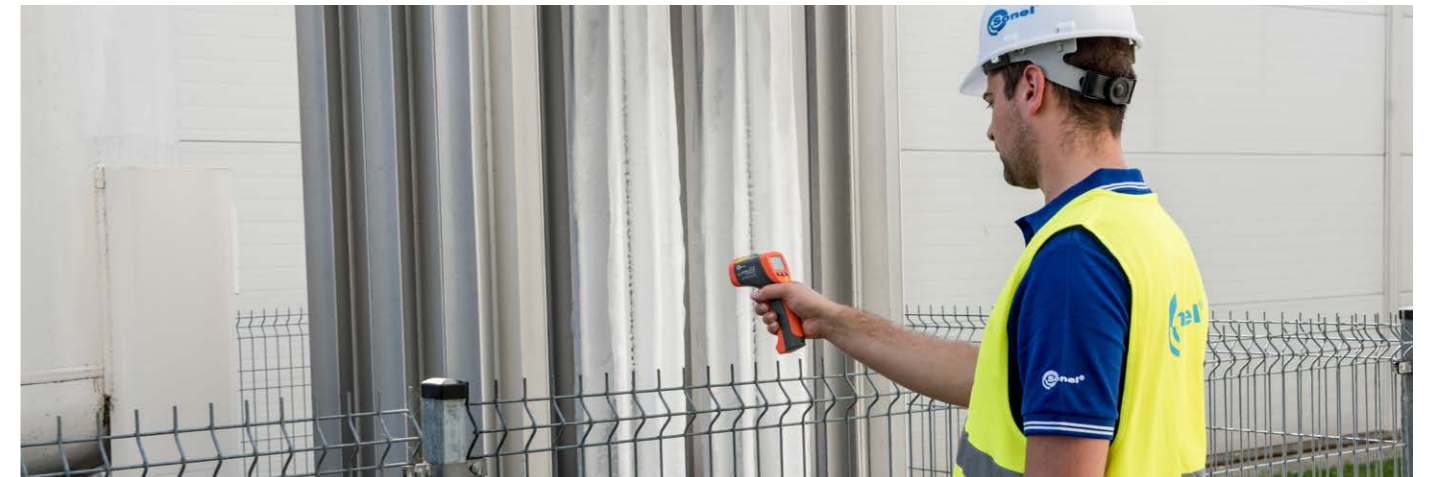
detect

Take non-contact temperature measurement with device-specific accuracy. If the threshold is exceeded, an alarm may sound - all this so that you can quickly and efficiently detect an undesirable temperature.

handy

Professional and compact, DIT-series infrared thermometers are a solution for problems in every area where temperature measurements are essential. The intuitive one-hand operation of the devices and the ergonomically designed gun-type housing allow for trouble-free daily work.

|	Industrial application			
	Basic	Basic	Intermediate	Advanced
	DIT-120	DIT-130	DIT-200	DIT-500
D:S (distance to spot) ratio	12:1	13:1	20:1	50:1
Spectral sensitivity	8~14 µm	8~14 µm	8~14 µm	8~14 µm
Temperature range (IR)	-50°C...650°C	-32°C...380°C	-50°C...1000°C	-50°C...1600°C
Accuracy (IR)	±3.5°C (-50°C...20°C) 1.0% + 1°C (20°C...300°C) 1.5% (300°C...650°C)	±5°C (-32°C...-20°C) 1.5% + 2°C (-20°C...200°C) 2% + 2°C (200°C...380°C)	±3.5°C (-50°C...20°C) 1.0% + 1°C (20°C...300°C) 1.5% (300°C...1000°C)	±2.5°C (-50°C...20°C) 1.0% + 1°C (20°C...400°C) 1.5% + 2°C (400°C...800°C) 2.5% (800°C...1600°C)
Temperature range (K-type probe)	—	-50°C...1370°C	-50°C...1370°C	-50°C...1370°C
Accuracy (K-type probe)	—	1.5% + 3°C (-50°C...999.9°C) 1.5% + 2°C (1000°C...1370°C)	2% (-50°C...0°C) 0.5% + 1.5°C (0°C ...1370°C)	1.5% + 3°C (-50°C...999.9°C) 1.5% + 2°C (1000°C...1370°C)
Response time	150 ms	<1 s	150 ms	150 ms
Laser pointer	dual	single	multi-point	dual
Semiconductor laser diode				
Output power	<1 mW	<1 mW	<1 mW	<1 mW
Wavelength	630~670 nm	630~670 nm	630~670 nm	630~670 nm
Class	2(II)	2(II)	2(II)	2(II)
Internal memory	—	20 measurements	—	100 measurements
Data transfer to PC	—	—	—	√

safe

Protecting life and health of a measuring person is our priority, especially in relation to dangerous objects - under voltage, high temperature or in motion. Sonel KT cameras allow to effectively assess the temperature distribution on the surface of the observed object completely non-contact, remote, safe. Such measurement method does not influence the work of measured objects, giving a real picture of the situation at the time of operation.

THERMAL IMAGERS

45.7

80x80

160x120

255x192

288x384

640x480

23.8

professional

Regardless whether you take pictures or record videos, the latest Sonel cameras guarantee a high level of detail of the recorded images and the accuracy of the performed measurements. Equipped with modern detectors, a wide range of temperature measurement and high quality lenses. Their design considers many years of experience and feedback from users.
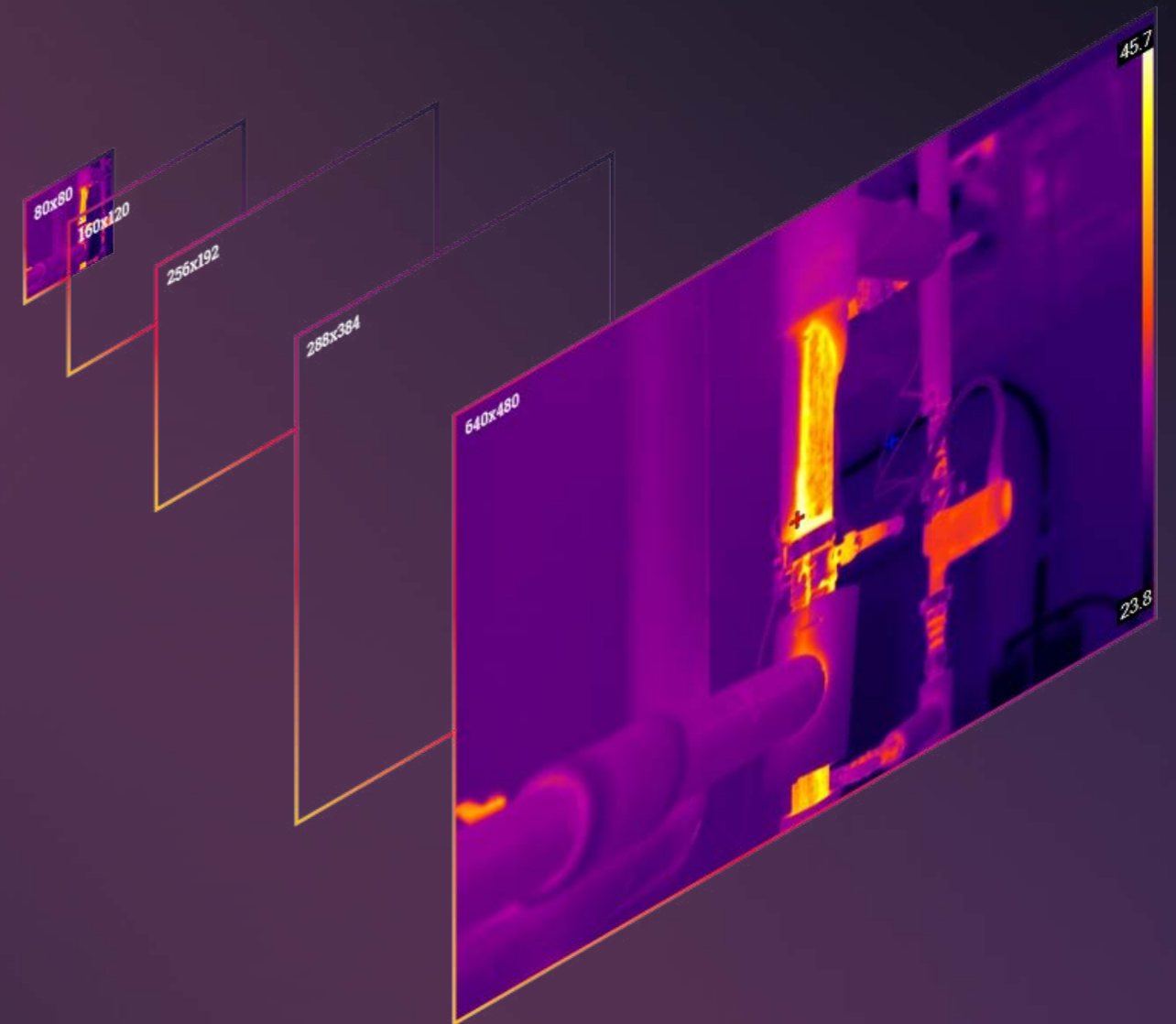
precise

A wide range of available resolutions of cameras allows you to choose the best tool for your needs. The resolution of the camera allows to detect more details, measure more precisely and adjust the frame. Basic resolutions can be easily applied to simple everyday tasks, and higher resolutions will work wherever precision is required. Camera lenses have been made with the highest accuracy, from high-quality materials to provide a reliable picture.

adjusted

Cameras come in several variants allowing selection of the right configuration for each user's individual requirements.

	Body temperature measurement		Industrial applications					
	Basic	**Advanced**	**Basic**	**Advanced**		**Ultra-advanced**		
	KT-120M	**KT-560M**	**KT-128**	**KT-200**	**KT-400**	**KT-560**	**KT-650**	**KT-670**
Detector resolution	120 x 90	384 x 288	120 x 90	192 x 144	384 x 288	384 x 288	640 x 480	640 x 480
Temperature range	20°C...50°C	20°C...60°C	-20°C...400°C	-20°C...600°C	-20°C...600°C	-40°C...800°C	-40°C...800°C	-40°C...800°C
Maximal range with the use of optional lens	–	–	–	1500°C	1500°C	2000°C	2000°C	2000°C
Standard lens (field of view/focal length)	50° x 38° / 2.28 mm	21.7° x 16.4° / 25 mm	50° x 38° / 2.28 mm	37.8° x 28.8° / 7 mm	28.4° x 21.5° / 19 mm	24.9° x 18.7° / 15 mm	24.6° x 18.5° / 25 mm	24.6° x 18.5° / 25 mm
Optional lens (field of view / focal length)	–	–	–	14.4° x 10.8° / 19 mm	57° x 45° / 8.8 mm; 13.7° x 10.3° / 40 mm	48.1° x 35.9° / 7.78 mm; 11.2° x 8.4° / 33 mm; 7.3° x 5.5° / 50.7 mm; 23.3 mm x 17.5 mm / 67 mm; 24.9° x 18.7° / -	45.4° x 34.8° / 13 mm; 11.3° x 8.5° / 55 mm; 7.3° x 5.5° / 85 mm; 23.3 mm x 17.5 mm / 67 mm; 24.6° x 18.5° / -	45.4° x 34.8° / 13 mm; 11.3° x 8.5° / 55 mm; 7.3° x 5.5° / 85 mm; 23.3 mm x 17.5 mm / 67 mm; 24.6° x 18.5° / -
Accuracy	±0.5°C	±0.4°C (32°C...38°C); ±0.6°C (20°C ...32°C or 38°C...60°C)	±2°C or 2%	±2°C or 2%	±2°C or 2%	±2°C or 2%	±2°C or 2%	±1°C or 1%
Focusing	fixed focal	manual / auto	fixed focal	manual	manual	manual / auto	manual / auto	manual / auto
Palettes	–	8	6	8	8	8	10	12
Super-resolution	–	–	–	–	–	4x, 768 x 576	4x, 1280 x 960	4x, 1280 x 960
Panoramic images	–	–	–	–	–	–	–	√
Frame rate	25 Hz	25 Hz / 9 Hz	25 Hz	25 Hz	25 Hz	30 Hz	30 Hz	30 Hz
Visual picture	–	√	√	√	√	√	√	√
Imaging mode	IR	IR, visual, MIF, PiP	IR, visual, PiP	IR, visual, MIF, PiP	IR, visual, MIF, PiP	IR, visual, MIF, PiP	IR, visual, MIF, PiP	IR, visual, MIF, PiP
Video	–	SD, USB, Wi-Fi, LAN	–	SD, USB, Wi-Fi, HDMI	SD, USB, Wi-Fi, HDMI	SD, USB, Wi-Fi, LAN, HDMI	SD, USB, Wi-Fi, LAN, HDMI	SD, USB, Wi-Fi, LAN, HDMI
Built-in memory	–	√	–	√	√	√	√	√
External memory	√	√	√	√	√	√	√	√
Photo image format	JPG	JPG	JPG	JPG	JPG	JPG	JPG	JPG
Video file format	–	IRV, AVI	–	IRV, AVI	IRV, AVI	MP4, IRGD	MP4, IRGD	MP4, IRGD
File transfer to PC	microSD card	SD card, USB, Wi-Fi, LAN 1 Gb/s, HDMI	microSD card, USB	microSD card, USB, Wi-Fi, HDMI	microSD card, USB, Wi-Fi, HDMI	karta SD, USB, Wi-Fi, LAN 1 Gb/s, HDMI, Bluetooth	karta SD, USB, Wi-Fi, LAN 1 Gb/s, HDMI, Bluetooth	karta SD, USB, Wi-Fi, LAN 1 Gb/s, HDMI, Bluetooth
Laser pointer	–	√	–	√	√	√	√	√
Laser rangefinder	–	–	–	–	–	√	√	√
LED flashlight	–	√	–	√	√	√	√	√
GPS	–	√	–	–	–	√	√	√
Compass	–	√	–	–	–	√	√	√
Replaceable Li-Ion battery	–	√	–	√	√	√	√	√
Touchscreen	–	√	–	√	√	√	√	√
Viewfinder	–	√	–	–	–	√	√	√
Basic image analysis tools	√	√	√	√	√	√	√	√
Extended image analysis tools	–	√	–	√	√	√	√	√
Report module with notes and voice recording in camera	–	√	–	√	√	√	√	√

observant

High-quality interchangeable lenses significantly extend the functionality of the cameras. Quickly and comfortably adjust to the existing situation, choosing the appropriate range and field of view of the camera.

sharp

The display also matters. It has been optimally adapted to camera parameters, both image processing, housing dimensions and ergonomics of use. A high degree back-light significantly improves the comfort of work. In extreme situations, a built-in viewfinder may be necessary.

ergonomic

Wide functionality allows you to adjust the camera settings to the current needs and the situation in which you want to do your job. Both image presentation options (a few modes of IR and visual picture combination, color palettes) as well as analysis tools, additional data (GPS, compass) and notes are helpful.

efficient

The reporting module, available in higher camera models, allows you to end your work with the basic report without using additional devices or software for processing thermograms. The report can be saved in PDF format or printed on a printer connected with the camera. However, if you prefer classic solutions, you can also use the Sonel ThermoAnalyze 2 computer program.

convenient

Sonel cameras have a number of innovative solutions that increase the convenience of their use. Flashlight, laser, tilted lens, rotating touch screen - these are just some of them.

mobile

A mobile app works with Sonel thermal imaging cameras. With KT Mobile app, you can get a real preview of the image on your phone, as well as perform a number of tasks, such as image analysis and creating reports.

fast and total

The system may contain or limit the spread of diseases through identification of infected individuals showing fever symptoms. It combines advanced technology such as thermographic human temperature detection and AI intelligent face tracking which makes the equipment accurate and easy to use.

with your finger on the pulse

Sonel KT-800M is equipped with various powerful functions. Multi-target tracking ensures that no target is missed. Custom warning zones and high-temperature shielding settings help avoiding interference from other high-temperature objects. When a feverish person is detected, the system supports automatic warning, tracking and photo taking for storage. It also supports video recording. Convenient for query and classify management.

FEVER WARNING SYSTEM

watchful

Sonel KT-800M IR Fever Warning System can be applied to mass fever screening in crowded public places, which helps detect people with potential fever.

	Professional
	KT-800
Detector resolution	400 x 300
Detector	17 µm
Frame rate	25 Hz
Sensitivity	≤40 mK
Lens (field of view / focal distance)	38° x 28° / 9.7 mm
Accuracy	≤ ±0.3°C (ambient temperature 16...32°C)
Measurement range	-10...+50°C
Calibration	Built-in shutter and external black body, automatic calibration mode
Visual camera	
Resolution	2 MPix
Frame rate	25 Hz
Functions	
Parameter settings	Warning switch and warning threshold value, number of warning targets, warning photos automatic clearing, shielding fixed high temperature objects
Face tracking	Intelligent face tracking
Real-time preview	Real-time preview of visible and thermal image
Real-time spot temperature detection	Real-time temperature monitoring at any point in the field of view
Automatic tracking	Support automatic tracking for elevated temperatures
Automatic warning	Automatic tracking, warning and photo capturing for storage when person with fever is detected. Warning while the blackbody is blocked
Historical records	Support query, classification and deletion of historical warning screenshots
Video recording	Supported. The software needs to be upgraded to V1.1.0.9, and equipped with NVR (NVR standard 4T hard disk). Supports GB28181 protocol to access third-party platforms
Network communication protocol	HTTP, RTSP
Environmental conditions	
Operating temperature	-10...+50°C (ambient temperature 16...32°C)
Storage temperature	-20...+60°C
Humidity	<90% (non-condensing)
Shock	30g 11 ms, IEC60068-2-27
Vibration	10 Hz ~ 150 Hz ~ 10 Hz 0.15 mm, IEC60068-2-6
Black body	
Blackbody target surface uniformity	≤0.1°C
Temperature stability	≤ ±0.2°C (single point)
Camera head interface	
Network interface	Two-way, visible light 100M, infrared 1000M
Camera head power	
Input voltage	DC 12 V
Input power	≤12 W
Camera head size	173 x 184 x 212 mm
Total height (incl. stand)	2200 mm

Eyes are not enough.
Use Sonel instruments for measurements.