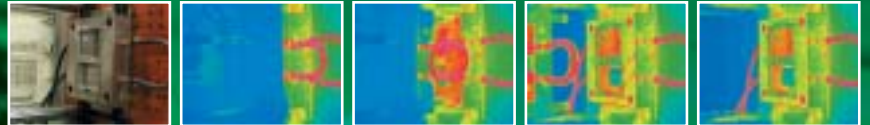


## Infrared Thermal Imager Thermo Tracer TH9100MR/WR

Movie image recordable!! Easy measurement of fast changing objects.

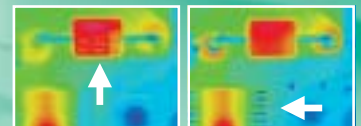
### Moving image (real-time memory)



Moving images: opening and closing of a mold

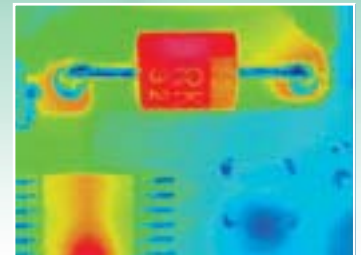


### Multi-focus Image



[Focused on NEAR]

[Focused on FAR]



[Multi-focus image (with 95 $\mu$ m close-up lens)]

### High performance UFPA detector

Resolution: 0.02°C (TH9100MR at 30°C,  $\Sigma$ 64)  
Accuracy:  $\pm$ 2% of reading or  $\pm$ 2°C

### Moving image recordable

Recording time:  
Approx. 27 sec (at 60 frames/sec)  
Approx. 55 sec (at 30 frames/sec)  
Approx. 166 sec (at 10 frames/sec)

### Multi-focus function

Performs edge detection of acquired images, while moving the focus, and fuses them into an image with deeper depth of field (Freeze-frame)

### Visual/thermal image fusion function

Measures visual and thermal images simultaneously and displays the fusion image for easy identification of thermal spots.  
Automatically corrects parallax of thermal and visual images.

### Real-time emissivity correction for multiple points

Emissivity can be set for up to 10 points (Patented)

### Reflective/transmissive color LCD

Clear and sharp images can be obtained by reflected light at daytime and backup light at nighttime.

### Easy operation

Easy-to-use joystick control  
Multilingual menu: (English, French, German, Italian, Japanese, Korean, Portuguese, Russian, Spanish, Simplified Chinese and Traditional Chinese)  
Automatic functions: Level/sense/focus, Level trace & Auto gain control

### Voice recording

Voice memo can be recorded up to 30 seconds per image. A fresh reminder of the field condition.

### Robust design

Dust/splash-proof: IP54  
Shock-proof: 294m/sec<sup>2</sup> (30G)  
Vibration-proof: 29.4m/sec<sup>2</sup> (3G)

## Specifications

Measuring range		TH9100MR	TH9100WR
	Range 1	-20 to 100°C	-40 to 120°C
	Range 2	0 to 250°C	0 to 500°C
	Range 3 (optional)	100 to 800°C (Display:0 to 800°C)	200 to 2000°C (Display:0 to 2000°C)
	Range 4 (optional)	200 to 2000°C (Display:0 to 2000°C)	—
Resolution	Range 1	0.06°C (at 30°C, 60Hz) 0.02°C (at 30°C, $\Sigma 64$ )	0.08°C (at 30°C, 60Hz) 0.03°C (at 30°C, $\Sigma 64$ )
Accuracy	±2°C or ±2% of reading, whichever is greater		
Detector	Uncooled focal plane array (microbolometer)		
Spectral Range	8 to 14μm		
I.F.O.V.	1.2mrad		
Focusing Range	30cm to infinity		
Field of View	21.7° (H) x 16.4° (V)		
Frame Time	60 frames/sec		
Display	View finder & 3.5-inch color LCD		
Thermal Image Pixels	320 (H) x 240 (V) pixels		
A/D resolution	14 bits		
Measuring functions	Run/Freeze		
S/N improvement	$\Sigma 2$ , $\Sigma 8$ , $\Sigma 16$ , $\Sigma 32$ , $\Sigma 64$ and spatial filter ON/OFF		
Alarm	Screen display and alarm sound (ON/OFF)		
Interval measurement	Recording on built in real time memory: 1/60 to 3600 sec interval		
	Recording on memory card: 5 to 3600 sec interval (thermal image) 30 to 3600 sec (thermal & visual images) Trigger function provided		
Emissivity correction	Provided (0.10 to 1.00), Emissivity table provided.		
Env. temp. correction	Provided (including interval NUC)		
User setup	Pre-registration of environmental setup (max 10 setups)		
Background Compensation	Provided		
Ambient correction	Provided		
Auto functions	Full automatic (level, sense, focus) Level trace, Auto-gain control		
Display functions	Thermal/visual fusion image display		
	Display color: color/monochrome, positive/negative		
	Gradation: 16, 32, 64, 128, 256		
	Color palette: rainbow, brightness, shine, hot-iron, medical, fine		
	Isothermal band display: max. 4 bands		
	Thumbnail display: 12 thermal images replay		
	Multi-sense display, Battery life indicator		
Image processing functions	Variable level/sense		
	Multi-point temperature display (up to 10 points)		
	Multi-point emissivity correction (up to 10 points)		
	Temperature difference between 2 points ( $\Delta t$ )		
	Max/Min (peak hold) temperature display		
	Alarm (full screen or specified box)		
	Digital zoom: 2, 4 times (Run/Freeze)		
Annotation	Text and voice annotation (30 sec per image)		
	Storage device		
Storage device	Compact flash memory card for:		
	Thermal image in SIT or BMP file format Visual image in SIT or JPEG file format Thermal/visual fusion image in BMP file format		
Movie recording	Real-time memory: up to 1664 images (max 60Hz)		
Video signal output	NTSC/PAL, composite video signal, S-video		
Interfaces	IEEE1394, RS-232C Compact flash memory card slot		
Operating temperature	-15 to 50°C, 90% RH or less (not condensed)		
Storage temperature	-40 to 70°C, 90% RH or less (not condensed)		
Power supply	AC adaptor: 100 to 240V, DC 7.2V (nominal)		
Power consumption	Approx. 6W (typ)		
Shock & vibration	Shock: 294m/sec <sup>2</sup> (30G) (IEC60068-2-27) Vibration: 29.4m/sec <sup>2</sup> (3G) (IEC60068-2-6)		
Environmental protection	IP54 (IEC60529)		
Dimensions	Approx. 108 (W) x 113 (H) x 189 (D) mm (excluding projections)		
Weight	1.4kg (excluding battery and LCD)		
	1.7kg (including battery and LCD)		
Standard accessories	AC adaptor, battery pack (2 pcs), battery charger, compact flash memory card, grip belt, neck strap, lens cap, carrying case, viewer software, operation manual		

\*\*Specifications are subject to change without prior notice.

\*\*Described company name and model are brand name or registration of trademark.

## Visual Camera

Pixels	0.41Mega pixels
Effective image pixels	752 (H) x 480 (V) pixels
Field of view	30.1°(H) x 22.7°(V)
Sensitivity	1 lux
Focusing distance	30cm to infinity
Auto exposure	Provided
Video signal	NTSC/PAL

## Applicable Software

### Report Generator NS9200 (optional)

- Helps to make reports easily with thermal images and temperature data on MS Word and Excel.
- Fusion of thermal and visual images.
- Subtraction (Entire image, specified area, like-figures)
- File management with database.
- Detects abnormal temperature by max/min temperature display.
- Data capture on Excel. (Allows to acquire and display real-time thermal image on Excel. Also enables to create graphs and display in moving mode.)



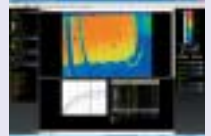
### Data Capture Program with Trigger Function NS9100 (optional)

- Helps to acquire real-time images via IEEE1394 or Ethernet.
- Easy programming of measurement condition and procedures. (Trigger Sequence function)
- Temperature display within specified area. (up to 16 points)
- Real-time trend display. (up to 8 waveforms)
- Real-time subtraction from selected thermal image.
- Real-time display of thermal/visual fusion image on selected visual image.



### Image Processor Pro II NS9300 (optional)

- Real-time data processing (Diagram setting,  $\Delta t$  display of multiple diagrams, graph display including 3-D graph)
- Thermal/visual image fusion.
- Patchwork (Integrates multiple thermal images into one and enables data analysis)
- Sequence editor (Converts multiple thermal image files into thermal movie files)
- Report generation (MS Word, MS Excel, HTML and MRT)
- Data output (Excel, BMP, JPEG and AVI)
- IEEE1394 data capture with simple trigger function.

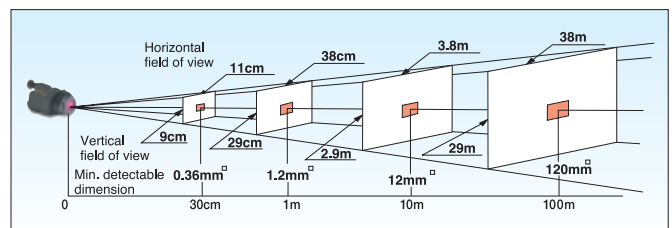


## Options

Model	Description
TH91-390	High temperature range for TH9100MR *1 R3: 100 to 800°C, R4: 200 to 2000°C
TH91-392	High temperature range for TH9100WR *1 R3: 200 to 2000°C
TH91-384	2x telephoto lens, 10.9°(H) x 8.2°(V), with visual camera
TH91-484	4x telephoto lens, 5.5°(H) x 4.1°(V)
TH91-383	0.5x wide angle lens, 42.0° (H) x 32.1° (V), with visual camera
TH91-386	95μm close-up lens, 30mm (H) x 22mm (V) W.D. 75mm
TH91-385	37μm close-up lens, 11mm (H) x 8mm (V) W.D. 13mm
Spy Glass lens	Fisheye lens, 53° x 40°

\*1 Specify these options when ordering the main unit (TH9100MR/WR)

## Field of View Diagram (Thermal image)



**CAUTION  
FOR SAFETY**

Please read "WARNING" & "CAUTION" in the operation manual attached to the product carefully for proper operation before using the product.

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