

Infrared Thermal Imaging Camera

High Resolution Infrared Image for Professional Thermographer

InfReC *R500EX* series

1.2 M pixels Infrared Thermal Imaging Camera

- Super Resolution Mode : 1280×960 pixel
- Spatial Resolution : equivalent to 0.58mrad

Real Time Transfer and Movie Recording into PC

- Real time transfer of 640 x 480 pixel image at 30Hz in high speed (conventional ratio 2 times)
- Software makes movie recording start automatically by external trigger input to R500EX-Pro

Temperature Resolution Upped by the Latest Noise Elimination Processing Technology

- Temperature resolution : 0.025°C by denoising feature (the highest level of this class)
- Temperature accuracy : $\pm 1^\circ\text{C}^{\ast 1}$ (the highest level of this class)

Variety of Lens Lineup Makes Play an Active Role in Various Measuring Scene

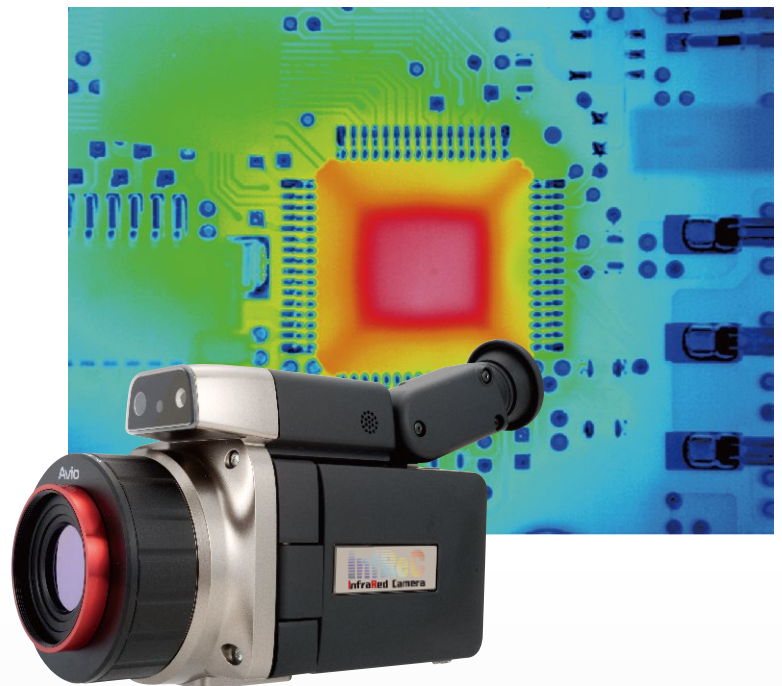
- 21 μm Closeup Lens ■ 52 μm Closeup Lens
- 2x Telephoto Lens ■ 2x Wide Angle Lens
- 3x Wide Angle Lens

Selectable 2 models for Your Application

- R500EX-Pro : Measuring range: -40 to +2000°C
Suitable for use in R&D, for making high temperature measurements, and for measuring sequential data.
- R500EX : Measuring range: -40 to +500°C
Excellent choice for inspection of electrical facilities and remotely located pipes.

※1 An internal investigation as of December 2015.

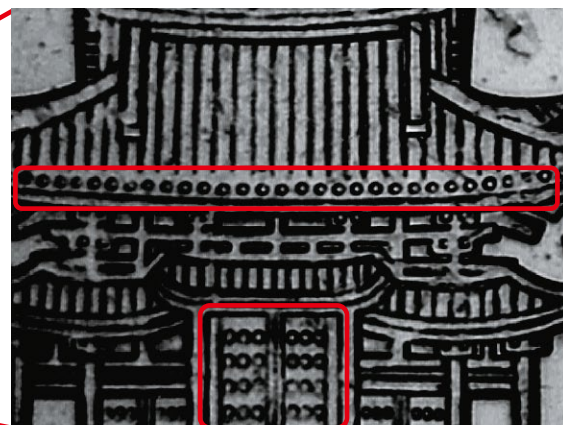
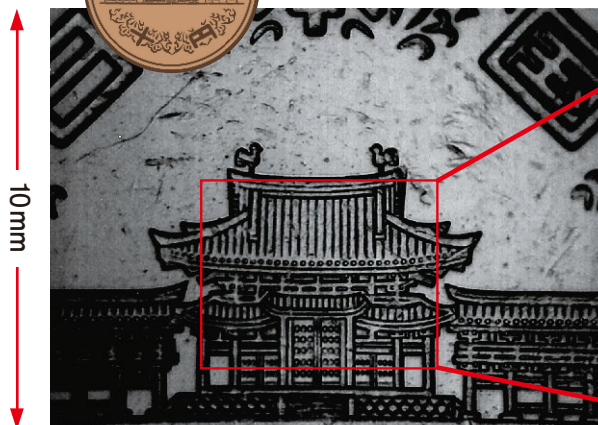
1.2 M pixels Super Resolution Thermal Image Technology



Measuring From Wide Angle To Micro Area Clearly By Combination with Optional Lenses



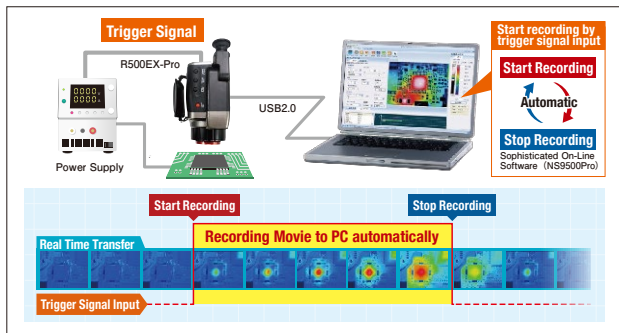
Using 21 μm Closeup Lens (Resolution 21 μm)



Detailed pattern can be taken sharply

Automatic Movie Recording Feature Built In

- Recording movie to connected PC automatically by external trigger input to R500EX-Pro
- Data recording linked with test equipment and field facility is available without configuring I/O system



User-Friendly Operation

Easy to shoot from any angle

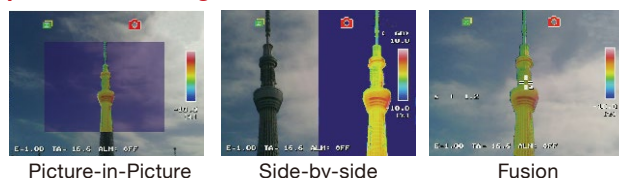
Multi-angle Tilting LCD Display and 2 REC Key-buttons enable flexible and comfortable one-hand operation.



Easy to use at various angle or height

Various Mixing Mode

Easy to compare 1.2M pixels thermal image with 5M pixels visual image.



Measuring Distance and F.O.V

Field of View and Spatial Resolution are the same magnification with measuring distance.

Lens Type		2x Telephoto Lens	Standard Lens	2x Wide Angle Lens	3x Wide Angle Lens
L=1m	Field of View (H) × (V)	29×22cm	57×42cm	128×92cm	211×149cm
	Spatial Resolution	0.44mm	0.9mm	1.74mm	3.1mm
	Normal Mode	0.30mm	0.6mm	1.16mm	2.1mm
	Super Resolution (SR mode) ^{*3}				

Specifications

Feature	R500EX-Pro	R500EX-Pro-D	R500EX	R500EX-D
Basic Performance	Infrared Detector: Uncooled Focal Plane Array (Microbolometer) Spectral Range: 8 to 14 μm Measuring Range: -40 to 2000 °C Sensitivity (NETD): 0.025 °C at 30 °C (with S/N improvement) Accuracy: ±1 °C ¹ Frame Rate: 30Hz, 7.5Hz, 30Hz, 7.5Hz Detector Pixels: 640(H) × 480(V) pixels Recording Pixels: Standard mode : 640(H) × 480(V), Super Resolution (SR mode) mode : 1280(H) × 960(V) ^{*2} Field of View: 32° (H) × 24° (V) (with standard lens) Spatial Resolution: Standard mode : 0.87mrad, Super Resolution (SR mode) mode : 0.58mrad equivalent ^{*3} Focal Distance: 10cm to infinity (with standard lens) ^{*4} Focus: Auto / Manual Auto Function: Auto Scale, Auto Focus, Full Auto			
Image Display	Color Palettes: 7 palettes (Rainbow, Brightness, Hot-white, Hot-black, etc.) Gradation: 256 / 32 / 16 / 8 grade Visible Camera: CMOS camera 5M pixels Display/Thermal Fusion: Side-by-side, Fusion (transparency changeable), Picture-In-Picture, (transparency changeable) Display Functions: 1 to 8 times continuous zoom (with display positioning scroll), Grid Overlay, 9 images multi-display (replay mode) Image Quality Improvement: Denoising, Averaging (with ghost rejection), Edge enhancement			
Measuring Functions	Point Temperature: 10 Movable Points, Temperature search: MAX/MIN x 1 each, Delta T Line Profile: Horizontal, Vertical, Horizontal & Vertical Temperature Display in Assigned Region: MAX, MIN and AVG in Box (for up to 5 Boxes) N/A Alarm Function: Alarm Display, Alarm Sound, Color Alarm, Alarm Recording, Alarm Signal Output N/A Temperature Correction: Emissivity, Environmental/Background, Distance Emissivity: Multi-point Correction, Emissivity Table Emissivity Reverse Calculation: N/A Drift Stabilizer: Yes N/A			
Storage & Output	Storage Device: SD card, Conforms to SDHC Data Storage: Still Image : JPEG with temperature data (14 bit) Recorded with, Visible Image Movie (only for R500EX-Pro/R500EX-Pro-D): SVX file (Avio original file) Super Resolution (SR): Yes Quick Panorama: Horizontal equivalent to 100° / Vertical equivalent to 75° SD Movie Recording: Max 3Hz N/A Interval Recording: 3 sec to 60 min interval, with Visible image recorded External Trigger Recording: Yes N/A Voice Recording: 30sec Recording, replay per a Thermal image Text Annotation: Annotate up to 128 Characters per a Thermal image. Characters imported from SD Card			
Others	Interface: USB2.0: Mass-Storage, Image transfer (Thermal Image with visible image. Maximum transfer speed is 30Hz) ^{*5} Video Output: NTSC / PAL Switchable Alarm Output: Contact Signal, No Voltage N/A External Trigger Input: Pulse Signal N/A Display: 3.5" LCD Monitor (with tilt and brightness adjustment), Color View Finder (with tilt adjustment) Auxiliary: Laser Pointer (Red, class 2, IEC 60825-1 2007/2014), LED Light, Remote Controller Operating Temperature & Humidity: -15 °C to 50 °C, 90%RH (non-condensing) Storage Temperature & Humidity: -40 °C to 70 °C, 90%RH (non-condensing) Vibration & Shock: 29.4m/sec ² (3G), 294m/sec ² (30G) EMC: Conforms to CE regulations (Class A) Dust & splash proof: Protection class IP54 equivalent Battery Operation: 2.5hours (Typ), Rechargeable Li-Ion battery AC Power: 100V - 220V AC, 50/60Hz Dimensions: Approx. H121mm×W105mm×D195mm (excluding projection) Weight: Approx. 1.3kg (including Battery Pack) Standard Accessories: Wired remote Controller x 1, SD Card x 1, USB Cable x 1, Neck Strap x 1, Grip Belt x 1, Rechargeable Li-Ion Battery x 1, Software x 1, Operation Manual x 1, and Carrying Case x 1 Standard Software: InfReC Analyzer NS9500Professional InfReC Analyzer NS9500Standard ^{*6}			

¹ Only the Range 1 at the environmental temperature from 20 to 30 °C (In other condition, it is ±2 °C or ±2%).
² Still Image Only
³ This increased resolution results from detecting characteristic within all frames acquired by the SR process and removing such effects as those caused by hand vibration.
⁴ For temperature accuracy : 30cm to infinity.
⁵ Thermal image only when image transfer speed at 30Hz
⁶ In order to transfer Thermal image movie data by R500EX / R500EX-D, you need to upgrade to "InfReC Analyzer NS9500 Professional" (optional software).

Power Kit

R500EX series is not including AC adapter, battery charger and AC cables. Please order below Power Kit with R500EX series main unit.

Item	Model	Specification/remarks
Power Kit	PKA-110VGM(US)	For 100 to 120V region (US)
	PKA-110VGM	For 100 to 120V region (Taiwan)
	PKA-220VGM	For 220 to 240V region (Europe and Asia)

Options

Options	Model	Specification/remarks
Lens	2x Telephoto Lens	IRL-TX02D
	2x Wide Angle Lens	IRL-WX02D
	3x Wide Angle Lens	IRL-WX03D
	21 μm Closeup Lens	IRL-C021UB20
	52 μm Closeup Lens	IRL-C052UB
Accessory	AC adaptor	RC60G-09D-110V(US)/110V/220V
	Rechargeable Battery Pack	2UR18650F
	Battery Charger	NC-LSC05-110V(US)/110V/220V
	LCD Hood	IRU-F01A

NIPPON AVIONICS CO.,LTD.

Overseas Sales Department
 Industrial Electronic Products Sales Division
 Shin-Yokohama Plant Shimamura-Building, 4475,
 Ikonobe-cho, Tsuzuki-ku, Yokohama-shi,
 224-0053, Japan
 TEL: +81-45-930-3596 FAX: +81-45-930-3597
 E-mail : product-irc-e@ml.avio.co.jp

<http://www.avio.co.jp/english/>



WARNINGS & CAUTIONS

Before using this product, please carefully read the provided Operation Manual "WARNINGS" & "CAUTIONS" section to ensure proper operation.
 Please do not place the product in high temperature, high humidity or high inert gas environments.

Distributor: