InfReC InfraRed Camera

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℃ by denoising feature (the highest level of this class)
- Temperature accuracy : ±1℃[1] (the highest level of this class)

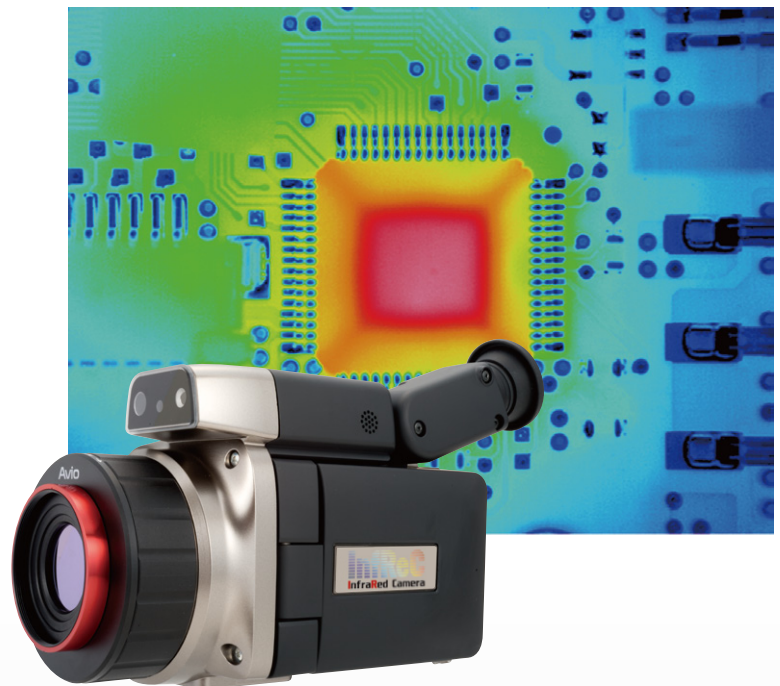### Variety of Lens Lineup Makes Play an Active Role in Various Measuring Scene
- 21µm Closeup Lens
- 52µm Closeup Lens
- 2x Telephoto Lens
- 2x Wide Angle Lens
- 3x Wide Angle Lens

Selectable 2 models for Your Application
- R500EX-Pro : Measuring range : -40 to +2000℃ Suitable for use in R&D, for making high temperature measurements, and for measuring sequential data.
- R500EX : Measuring range : -40 to +500℃ Excellent choice for inspection of electrical facilities and remotely located pipes.

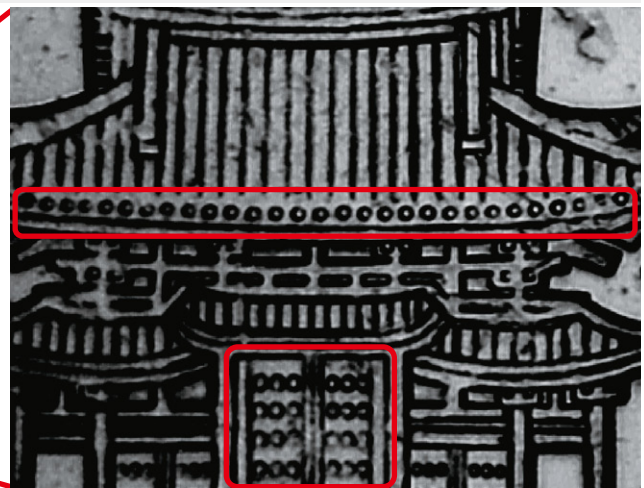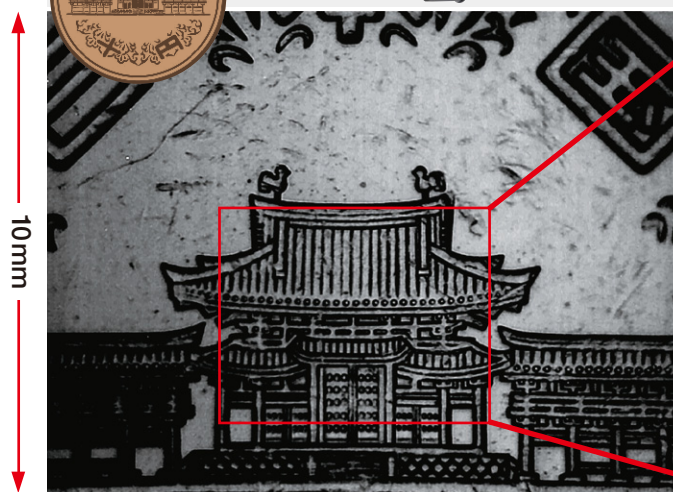 [1] An internal investigation as of December 2015.

1.2 M pixels Super Resolution Thermal Image Technology

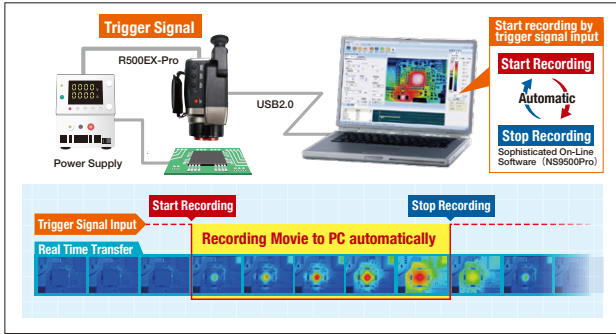## Measuring From Wide Angle To Micro Area Clearly By Combination with Optional Lenses

Using 21µm Closeup Lens (Resolution 21µm)

10mm

13mm

Detailed pattern can be taken sharply

NIPPON AVIONICS CO.,LTD.

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
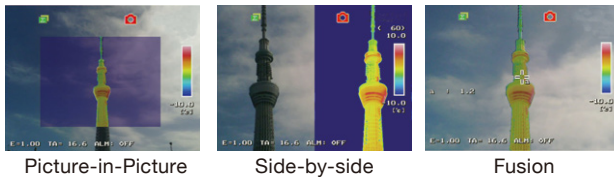
Easy to shoot from any angle

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.

Picture-in-Picture   Side-by-side   Fusion

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
	Spational Resolution — Normal Mode	0.44mm	0.9mm	1.74mm	3.1mm
	Spational Resolution — Super Resolution (SR mode)*3	0.30mm	0.6mm	1.16mm	2.1mm

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		−40 to 500°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			
Image Display	Auto Function	Auto Scale, Auto Focus, Full Auto			
	Color Pallets	7 pallets (Rainbow, Brightness, Hot-white, Hot-black, etc.)			
	Gradation	256 / 32 / 16 / 8 grade			
	Visible Camera	CMOS camera 5M pixels			
	Visible/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	Provided		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)	Provided			
	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	Provided		N/A	
	Voice Recording	30sec Recording, replay per a Thermal image			
	Text Annotation	Annotate up to 128 Characters pera Thermal Image. Characters imported from SD Card			
	Interface				
	USB2.0	Mass-Storage, Image transfer (Thermal Image with visible image. Max imum transfer speed is 30Hz) *5			
		Automatic recording function by external trigger input		N/A	
	Video Output	NTSC / PAL Switchable			
	Alarm Output	Contact Signal. No Voltage		N/A	
	External Trigger Input	Pulse Signal		N/A	
Other / Environment Resistance	Display	3.5" LCD Monitor (with tilt and brightness adjustment), Color View Finder (with tilt adjustment)			
	Auxiliary	Laser Pointer (Red, class 2, comform to PSC reglation), 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/sec² (3G), 294m/sec² (30G)			
	EMC	Conforms to CE regulations (Class A)			
	Dust & splash proof	Protection class IP54 equivalent			
	Battery Operation	2.5hours (Typ), Rechargeable Li-Ion battery, (7.5 hours with optional "Portable Power (TVB-C501)") *6			
	AC Power	100V − 220V AC, 50/60Hz			
	Dimensions	Approx. H121mm×W105mm×D195mm (excluding projection)			
	Weight	Approx. 1.3kg (including Battery Pack)			
	Standard Software	InfReC Analyzer NS9500Professional		InfReC Analyzer NS9500Standard *7	

Options

Options		Model	Specification/remarks
Lens	2x Telephoto Lens	IRL-TX02D	16°(H)×12°(V)
	2x Wide Angle Lens	IRL-WX02D	64°(H)×48°(V)
	3x Wide Angle Lens	IRL-WX03D	93°(H)×73°(V)
	21μm Closeup Lens	IRL-C021UB20	13mm(H)×10mm(V), Working Distance 22mm
	52μm Closeup Lens	IRL-C052UB	33mm(H)×25mm(V), Working Distance 56mm
Accessory	Rechargeable Battery Pack	T2UR18650F-5928	2500mAh Driving Hours: 2.5 Hours (typical)
	Battery Charger	NC-LSC05-110V/220V	110v or 220v
	LCD Hood	IRU-F01A	
	Long time battery case	TVB-C501	Contains 2 batteries. Battery not included

*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 2 extra batteries (optional parts) are required for 7.5 hours operation.
*7 In order to transfer Thermal image movie data by R500EX/R500EX-D, you need to upgrade to "InfReC Analyzer NS9500 Professional" (optional software).

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:

Catalog ref : AV017 U1601A2