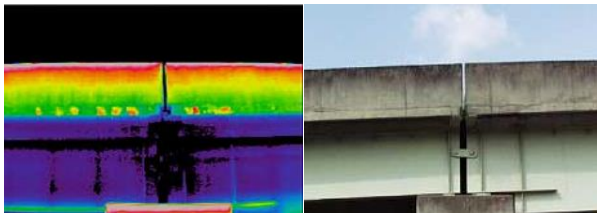


Infrared Thermal Imaging Camera

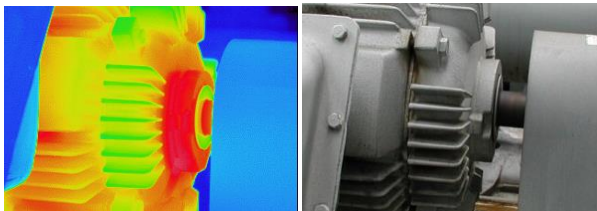
High Resolution · Multi-purpose Model

InfReC *R450 Series*

High resolution, high sensitivity, high precision !
 Versatile model which is useful in wide variety of scenes from structure diagnosis to research of micro component.



Diagnosis of structure (Bridge)



PPM (Motor bearing, etc)

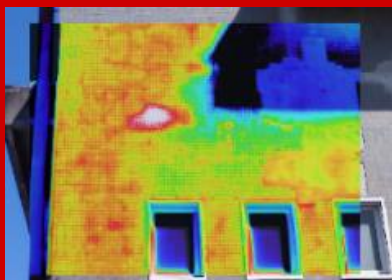
High performance
 at affordable price



Feature 1

[Fine image for wider area]

FOV : 24°×18°
 Pixels : 480×360
 Spatial resolution : 0.87mrad

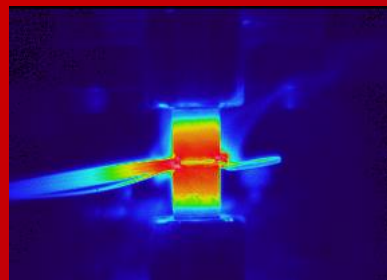


Building diagnosis

Feature 2

[Wide measurement range]

Room temp. to 1500°C
 Changing temperature of object
 can be measured in one range
 without range change
 ※R450Pro

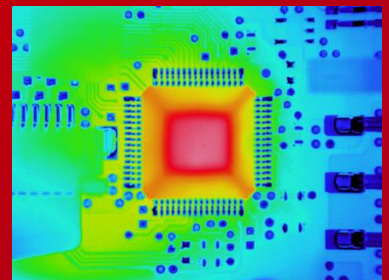


Observation of
 heat storage/heat release

Feature 3

**[Close-up image
 with high resolution !]**

960×720 pixels ※SR mode
 Micro object can be measured
 without optional lens



Thermal test of device

Composite mode support ease of viewing

Easy switch with one button



Side-by-side



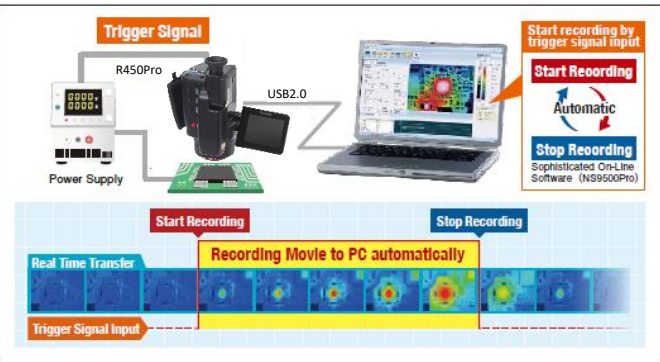
Picture-In-Picture (transparency changeable)



Fusion (transparency changeable)

Automatic Movie Recording Feature Built In(R450Pro)

- Recording movie connected PC automatically by external trigger input to R450
- Data recording linked with test equipment and filed facility is available without configuring I/O system



Measuring Distance and F.O.V.

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

Lens Type		2x Telephoto Lens	Normal Lens	2x Wide Angle Lens
L=1m	Field of View(H)x(V)	21x16cm	43x32cm	86x64cm
	Spatial Resolution	Normal Mode	0.45mm	0.9mm
Super Resolution (SR) mode		0.3mm	0.6mm	1.3mm

Options

Options/Model	Specification/remarks
Lens	2x Telephoto lens, IRL-TX02C-B 2x Wide Angle Lens, IRL-WX02C-B 52 μm Closeup Lens, IRL-C052UC
Accessory	AC adaptor, RC60G-09D-110V(US)/110V/220V Rechargeable Battery Pack, 2UR18650F Battery Charger, NC-LSC05-110V(US)/110V/220V

Listed specifications, appearance and design are subject to change without notice. Company and commodity names are trade names or registered trade marks of each company. NIPPON AVIONICS Co., Ltd. will not be responsible for any damage of infrared detectors due to incoming strong light (e.g. laser) through lens(es). This product is subject to Japanese Export Control Law. Depending on its destination, prior assessment and authorization may be required. When exporting from country of initial purchase destination, please be sure to follow that country's export regulations as it may require an export permit beforehand.

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

Specification

Feature	R450Pro	R450Pro-D	R450	R450-D
Infrared Detector	Uncooled Focal Plane Array (Microbolometer)			
Spectral Range	8 to 14 μm			
Measuring Range	-40 to 1500 °C			-40 to 650 °C
Sensitivity (NETD)	0.025 °C at 30 °C (with S/N improvement)			
Accuracy	±1 °C +1			
Frame Rate	40Hz	8.0Hz	40Hz	8.0Hz
Detector Pixels	480(H) × 360(V) pixels			
Recording Pixels	Standard mode: 480(H) × 360(V), Super Resolution (SR) mode: 960(H) × 720(V) *2			
Field of View	24°(H) × 18°(V) (with standard lens)			
Spatial Resolution	Standard mode: 0.87mrad, Super Resolution (SR) 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			
Color Palettes	7 palettes (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			
Point Temperature	10 Movable Points, Temperature search: MAX/MIN x 1 each, Delta T			
Temperature Display in Assigned Region	MAX, MIN and AVG in BOX (Up to 5 boxes)			
Line Profile	Horizontal, Vertical, Horizontal & Vertical			
Alarm Function	Alarm Display, Alarm Sound, Color Alarm, Alarm Recording, Alarm Signal Output			
Temperature Correction	Emissivity, Environmental/Background, Distance			
Emissivity	Multi-point Correction, Emissivity Table			
	Emissivity Reverse Calculation			N/A
	Drift Stabilizer			Yes
Storage Device	SD card, Conforms to SDHC			
Data Format	Still image : JPEG with temperature data, 14bit (with visible image) Movie : SVX file (Dedicated format)			
Data Storage	Still image(JPEG with temperature data, 14bit), Recorded with visible image			
Super Resolution (SR)	Yes			
Quick Panorama	Horizontal equivalent to 75° / Vertical equivalent to 56°		N/A	
SD Movie Recording	Max 5Hz	Max 4Hz	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			
USB2.0				
Interface	Mass Storage	Yes		
	Movie Data Transfer	Thermal image: Max: 40Hz, Recorded with visible image *5	Thermal image: Max: 8Hz, Recorded with visible image *5	Thermal image: Max: 40Hz, Recorded with visible image *5
	External Trigger Input	Automatic recording function by external trigger input		
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			
Resistance	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	29.4m/sec ² (3G), 294m/sec ² (30G)		
	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 x W105mm x 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	InReC Analyzer NS9500Professional		InReC 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 40Hz
*6 In order to transfer thermal image movie data by R450 /R450-D, you need to upgrade to " InReC Analyzer NS9500 Professional " (optional software).

Power Kit

R450 series is not including AC adapter, battery charger and AC cables. Please order below Power Kit With R450 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)

AC adapter x 1,
battery charger x 1
and AC cable x 2



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: