

INFRARED SOLUTIONS - SYSTEMS & SERVICES

 **Avio**
an **NEC** Group Company
Infrared Systems
Infrarot Systeme





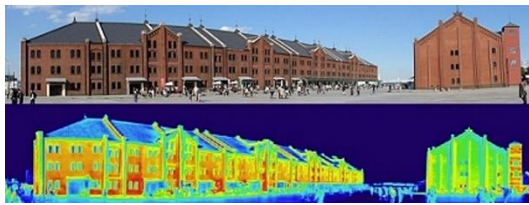
INFRARED-CAMERA-CONFIGURATOR
www.irPOD.net

Infrared Thermal Imaging Camera

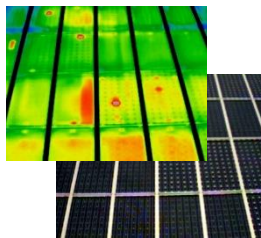
High Resolution · Multi-purpose Model

InfReC R450 Series

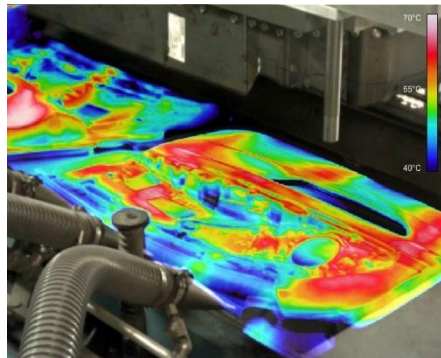
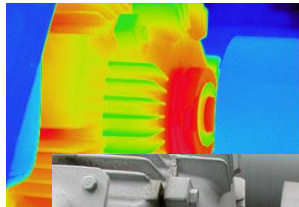
High resolution, high sensitivity, high precision !
 Versatile model which is useful in wide variety of scenes
 from structure diagnosis to research of micro component.



Panoramic-Movie-Single-shot fully radiometric



“DUAL” Control panel



Super Impose - Picture in picture function - LED illumination - LASER



Feature 1

[Fine image for wider area]

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

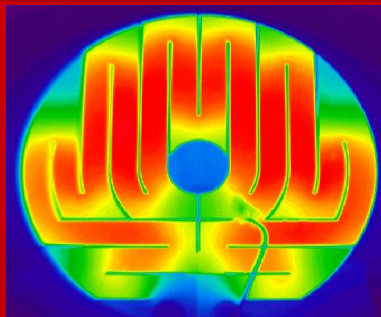


Building diagnosis

Feature 2

[Wide measurement range]

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

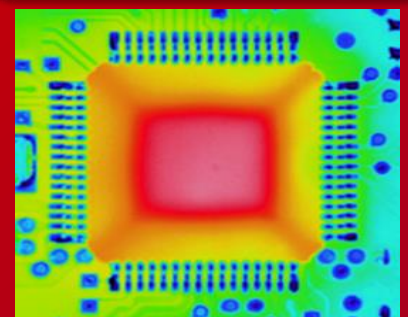


Dynamic measurement of hot objects

Feature 3

[Close-up image with high resolution !]

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



Microscopic thermography

Composite mode support ease of viewing

Easy switch with one button



Side-by-side



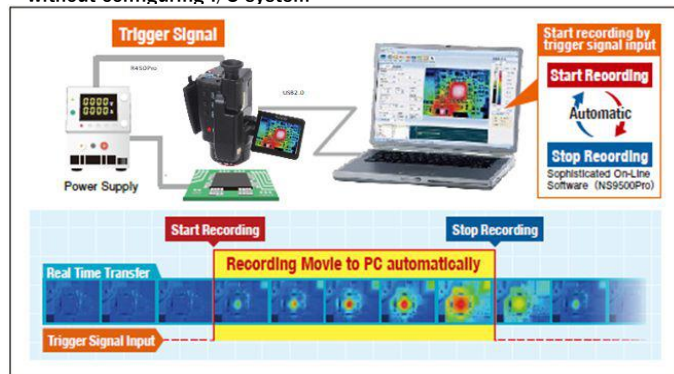
Picture-In-Picture (transparency changeable)



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
2x Telephoto lens, IRL-TX02C-B	12" (H) x 9" (V)
2x Wide Angle Lens, IRL-WX02C-B	48" (H) x 36" (V)
52 μm Closeup Lens, IRL-C052UC	25mm(H) x 18.7mm(V), Working Distance 56mm
AC adaptor, RC60G-09D-110V(US)/110V/220V	110V(US), 110V or 220V
Rechargeable Battery Pack, 2UR18650F	2500mAh Driving Hours : 2.5 Hours (typical)
Battery Charger, NC-LSC05-110V(US)/110V/220V	110V(US), 110V or 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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Specification

Feature	R450Pro	R450Pro-D	R450	R450-D
Basic Performance	Infrared Detector: Uncooled Focal Plane Array (Microbolometer) Spectral Range: 8 to 14 μm Measuring Range: -40 to 1500 C (with S/N improvement) Sensitivity (NETD): 0.025 C at 30 C (with S/N improvement) Accuracy: ±1°C +1 Frame Rate: 40Hz Detector Pixels: 480(H) x 360(V) pixels Recording Pixels: Standard mode: 480(H) x 360(V), Super Resolution (SR) mode: 960(H) x 720(V) *2 Field of View: 24°(H) x 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.)			
Image Display	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 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 & Output	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° SD Movie Recording: Max 5Hz / Max 4Hz Interval Recording: 3 sec to 60 min interval, with Visible image recorded External Trigger Recording: Yes 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			
Interface	USB2.0: Mass Storage: Yes Movie Data Transfer: Thermal image: Max: 40Hz, Recorded with visible image *5 External Trigger Input: Automatic recording function by external trigger input Video Output: NTS / PAL Switchable Alarm Output: Contact Signal, No Voltage External Trigger Input: Pulse Signal			
Others	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), 29.4m/sec ² (30G) EMC: 29.4m/sec ² (3G), 29.4m/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 charger 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:

NETHERLANDS

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CZECH REPUBLIC

SLOVAKIA

AUSTRIA

SWITZERLAND

Application
Anwendungsbereich

Model

Modell



Building Investigation Gebäudethermografie	●	●	●	●		
Electrical Thermography Elektrothermografie	●	●	●	●		
Medical/Human Body Investigation Medizintechnische Anwendungen	●	●	●	●	○	
Predictive Maintenance Vorbeugende Instandhaltung	●	●	●	●		○
Research & Development Forschung & Entwicklung	○	○	●	●	●	○
Automation/Conditional Monitoring Automation/Qualitätssicherung			●	●	●	○
Industrial Process Control Industrielle Prozesskontrolle			●	●	●	○
Surveillance/Rescue Management Fernbeobachtung/Sicherheitstechnik					●	
Traffic Control Verkehrsüberwachung					●	
Furnace/Glass melting industry Brennraum/Glasschmelze						●
Flame- and plastic measurement Flamm- und Folienmessung						●

○ capable geeignet

● well suitable gut geeignet

● particularly suitable sehr gut geeignet