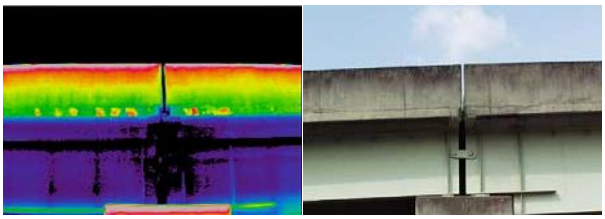
InfReC InfraRed Camera

Infrared Thermal Imaging Camera

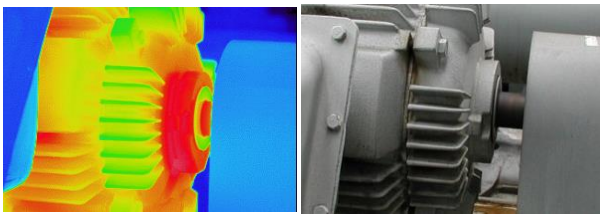
High Resolution・Multi-purpose Model

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

Feature 2

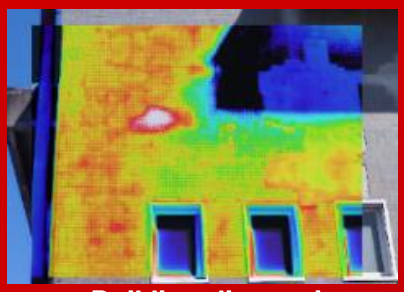
【Wide measurement range】

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

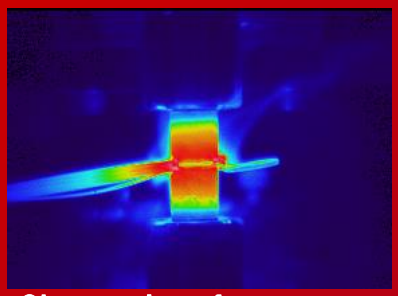
Feature 3

【Close-up image with high resolution ! 】

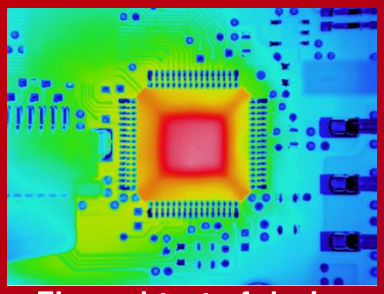
960×720 pixels ※SR mode
Micro object can be measured without optional lens



Building diagnosis



Observation of heat storage/heat release



Thermal test of device

NIPPON AVIONICS CO.,LTD.

Composite mode support ease of viewing

■Easy switch with one button

Side-by-side

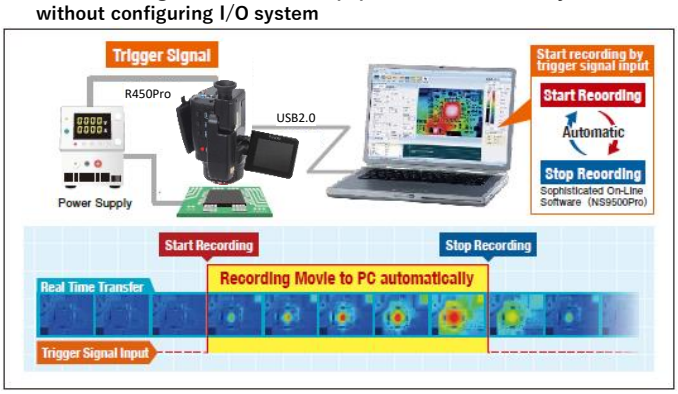
Picture-In-Picture
(transparency changeable)

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)×(V)		21×16cm	43×32cm	86×64cm
	Spatial Resolution	Normal Mode	0.45mm	0.9mm	1.8mm
		Super Resolution (SR) mode	0.3mm	0.6mm	1.3mm

Specification

	Feature		R450Pro	R450Pro-D	R450	R450-D
Basic Performance	Infrared Detector		Uncooled Focal Plane Array (Microbolometer)			
	Spectral Range		8 to 14μm			
	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			
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			
	Temperature Display in Assigned Region		MAX, MIN and AVG in BOX (Up to 5 boxes)		N/A	
	Line Profile		Horizontal, Vertical, Horizontal & Vertical			
	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 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	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			
	Interface	USB2.0				
		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	Thermal image: Max:8Hz、Recorded with visible image *5
		External Trigger Input	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	
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			
	Environment 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/sec²(3G)、294m/sec² (30G)			
		EMC	Conform to CE regulations (Class A)			
		Dust & splash proof	Protection class IP54 equivalen			
	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 x1, 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 40Hz
*6 In order to transfer thermal image movie data by R450 /R450-D, you need to upgrade to " InfReC Analyzer NS9500 Professional " (optional software).

Options

Options/Model		Specification/remarks
Lens	2x Telephoto lens, IRL-TX02C-B	12° (H) x 9° (V)
	2x Wide Angle Lens, IRL-WX02C-B	48° (H) x 36° (V)
	52μm Closeup Lens, IRL-C052UC	25mm(H) x 18.7mm(V), Working Distance 56mm
Accessory	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

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)	AC adapter x 1, battery charger x 1 and AC cable x 2
	PKA-110VGM	For 100 to 120V region (Taiwan)	
	PKA-220VGM	For 220 to 240V region (Europe and Asia)	

■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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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:AV026 M1902D0