Infrared Thermal Imaging Camera

InfReC — InfraRed Camera

High Resolution Infrared Image for Professional Thermographer
InfReC *R550* series

High speed sampling at maximum speed 120Hz (R550Pro)

- 120Hz : 640×120 with windowing
- 60Hz : 640×240 with windowing
- 30Hz : 640×480 at full window

Automatic movie recording function by PC

- Software makes movie recording start automatically by external trigger input.

1.2M pixels Infrared Thermal Imaging Camera

- Super Resolution Mode (SR MODE) :1280x960 pixel
  (Standard MODE) :640x480 pixel
- Spatial Resolution: equivalent to 0.58 mrad

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

- 21um Closeup Lens
- 52um Closeup Lens
- 2x Telephoto Lens
- 2x Wide Angle Lens
- 3x Wide Angle Lens

Selectable 2 models for your application

- R550Pro: Measuring range: -40 to 2000°C
  Suitable for use in R&D, for making high temperature measurements, and for measuring high temperature
- R550: Measuring range: -40 to 650°C
  Excellent choice for inspection of electrical facilities and remotely located pipes.

Realizes the highest speed sampling(*) in the portable VGA class equipment
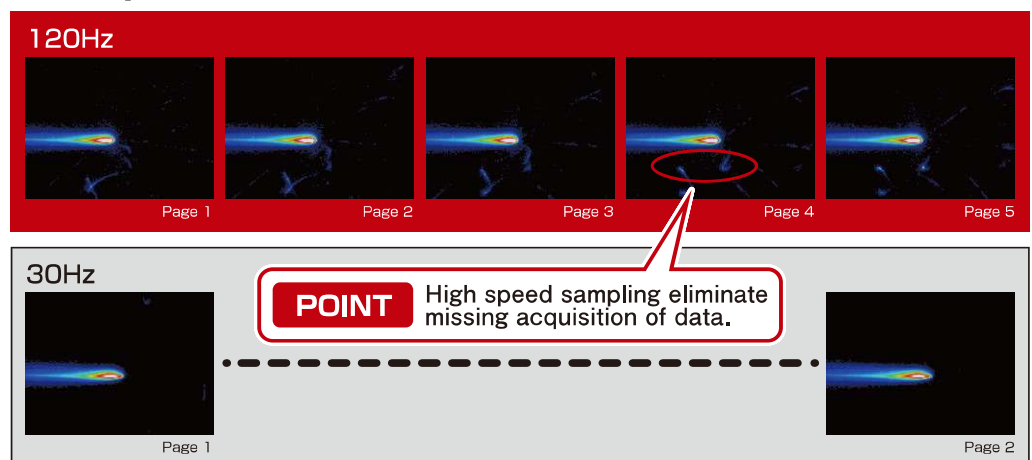*Research by Avio in August 2018
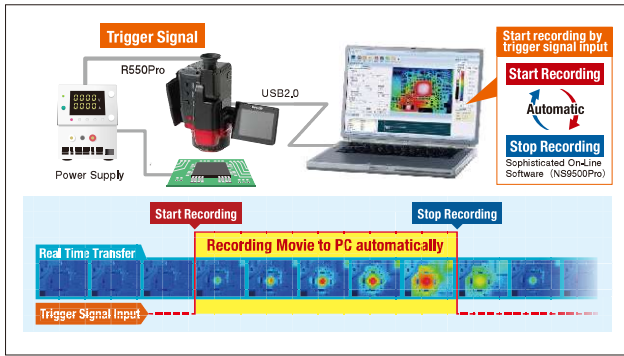
Avio

InfReC — InfraRed Camera

For monitoring of welding process.

By high speed sampling time of 120Hz (R550Pro), occurrence of small spatter and thermal affection can be checked.

120Hz

Page 1 | Page 2 | Page 3 | Page 4 | Page 5

30Hz

Page 1 | Page 2

POINT High speed sampling eliminate missing acquisition of data.

Image of laser welding

Example of laser welder monitoring (Object: Stainless steel, Laser output: 250W, Scan 50mm)

NIPPON AVIONICS CO., LTD.
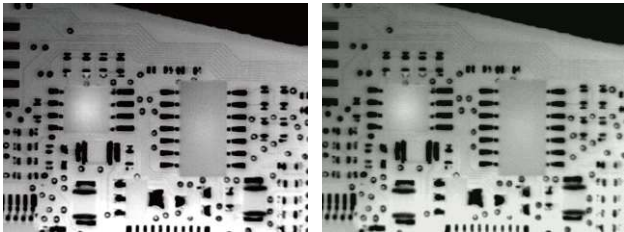
Automatic Movie Recording Feature Built In

■ Recording movie connected PC automatically by external trigger input to R550Pro
■ Data recording linked with test equipment and field facility is available without configuring I/O system

Maximum 1.2million pixel recoding (SR mode)

1.2 million pixels
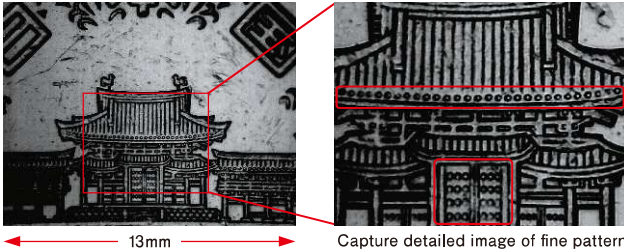(Taken by SR mode with digital zoom x2.0)

0.3 million pixels
(Take by standard mode with digital zoom x2.0)

Clear imaging and measurement from wide to micro with use of option lens

With use of 21um close up lens (Spatial resolution 21um)

13mm

Capture detailed image of fine pattern

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

Specifications

	Feature	R550Pro	R550Pro-D	R550	R550-D
Basic Performance	Infrared Detector	Uncooled Focal Plane Array (Microbolometer)			
	Spectral Range	8 to 14μm			
	Measuring Range	−40 to 2000°C		−40 to 650°C	
	Sensitivity (NETD)	0.025°C at 30°C (with S/N improvement)			
	Accuracy	±1°C *1			
	Frame Rate	30Hz / 60Hz*2 / 120Hz*3	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) *4			
	Field of View	32°(H) × 24°(V)　(with standard lens)			
	Spatial Resolution	Standard mode : 0.87mrad , Super Resolution (SR mode) mode : 0.58mrad equivalent *5			
	Focal Distance	10cm to infinity (with standard lens) *6			
	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 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			
	Interface USB2.0 — Mass Storage	Yes			
	Movie Data Transfer	Thermal image: Max : 30Hz, Recorded with visible image *7			
	Windowing Data Transfer — W1 : 640×240 / W2 : 640×120	Thermal image — W1 : 60Hz / W2 : 120Hz		N / A	
	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	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 x1, Neck Strap x 1, Grip Beltx 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 *8	

*1　Only the Range 1 at the environmental temperature from 20 to 30°C (In other condition, it is ±2°C or ±2%.)
*2 Windowing　Mode W1 (640×240) 　*3 Windowing　Mode W2 (640×120) 　*4 Still Image Only
*5 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.
*6 For temperature accuracy : 30cm to infinity　*7 Thermal image only when image transfer speed at 30Hz
*8 In order to transfer thermal image movie data by R550 /R550-D, you need to upgrade to "InfReC Analyzer NS9500 Professional" (optional software).

Power Kit

R550 series is not including AC adapter, battery charger and AC cables.
Please order below Power Kit with R550 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)	

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	AC adaptor	RC60G-09D-110V(US)/110V/220V	110V(US), 110V or 220V
	Rechargeable Battery Pack	2UR18650F	2500mAh Driving Hours : 2 Hours (typical)
	Battery Charger	NC-LSC05-110V(US)/110V/220V	110V(US), 110V or 220V
	LCD Hood	IRU-F01A	

■ 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.

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:
Ito Group Holdings Pte. Ltd. (Singapore) /　　　　　(Japan)

Email: howchoon.lee@ito-group.com
Phone: +65-6200-3217, Mobile: +65-9617-0840, Mr. How Choon Lee (Singapore)

E　　: ogura@ito-group.com
　　03-3668-3222　　　　080-1289-2509,　　　(Japan)