InfReC
InfraRed Camera

Infrared Thermal Imaging Camera

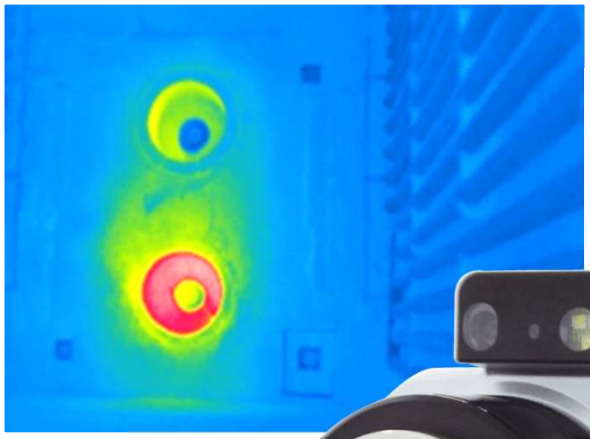
Specific Wavelength Model

InfReC R300BP Series

Introducing infrared thermography camera for specific wavelength measurement

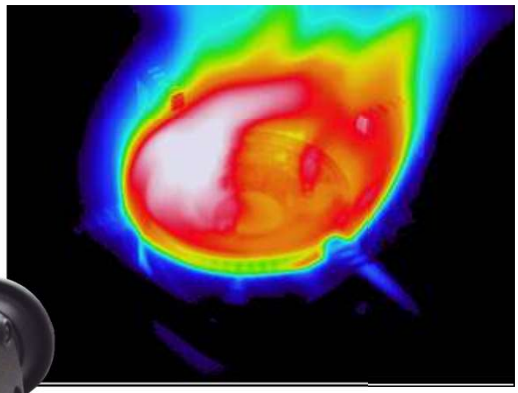
Maintenance free by installing uncooled sensor

R300BP-TF



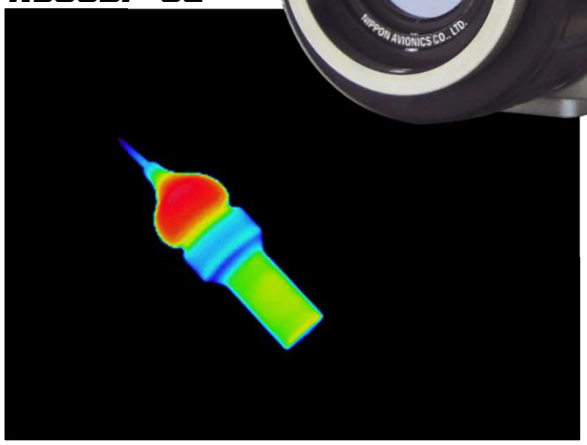
Measurement through flame

R300BP-OF



Measurement of flame

R300BP-OG



Measurement of glass surface

R300BP-TG

Measurement through glass

NIPPON AVIONICS CO.,LTD.

Specific Wavelength Model

R300BP Series

Features

Realization of low cost and maintenance free by uncooled sensor

Detect short wavelength by excellent sensitivity characteristic of Japanese uncooled sensor
Realization of low cost, maintenance free by without using expensive sensor cooler.

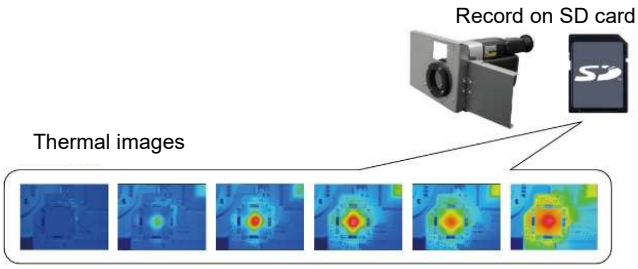
Quick measurement under harsh environment is possible by excellent operability and mobility

Lightweight and compact body weighing only 1.5kg. ※1
A rotational LCD monitor enables to capture image at various angles
Thermal movie images can be recorded on SD card.

Movable LCD monitor and View Finder

LCD monitor enable images to be captured at various angles

Thermal movie images can be recorded on SD card at max 10Hz and can be analyzed by software later.



On-line analysis software is standard accessory.

Transfer thermal images to a PC at 60fps via USB2.0. ※2
Both thermal and visual Images are captured simultaneously.
Display temperatures of measuring points and max/min/average in specified boxes.

Protective shield to protect operator from strong radiant heat

Protective shield is a standard accessory which protects operator from strong radiant heat from a firing furnace.

Protective shield is a standard accessory

General measurement range 0 to 500C can be added as an option.

Optional measurement range of 0 to 500C with 8 to 14um can be added. One camera can be used for specific measurement and general measurement.

Customized measurement is available.

We propose customized thermography based on measuring object and measurement wavelength※3

*1 Not including protective shield
*2 R300BP-TF-D/R300BP-OF-D/R300BP-TG-D/R300BP-OG-D:Thermal Image Max 8.5Hz, Visual Image Max 7.5Hz
*3 It may not be possible depending on conditions.

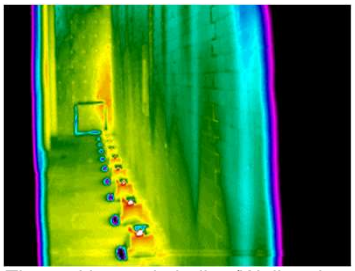
InfRec
InfraRed Camera

Product Line Up

●Through-Flame Measurement Model ***R300BP-TF***

R300BP-TF is a thermography camera for through-flame measurement with sensitively at 3.8um which has low absorption from gas flame. It allows real-time measurement without shutting down oil fired furnace and oil refinery furnace, by which inspection of clinker adhesion and inspection of piping coke become easy.

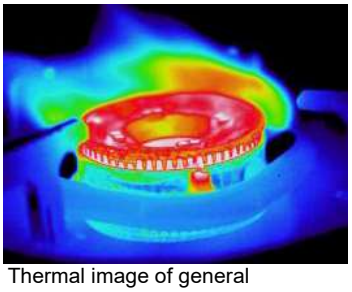
Visible image in boiler (Wall and burner are indistinguishable due to influence from flame)



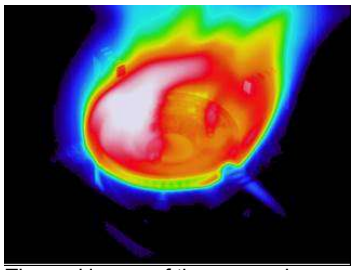
Thermal image in boiler (Wall and burner are distinguishable without influence from flame)

●Flame Measurement Model ***R300BP-OF***

R300BP-OF is a thermography camera for flame measurement with sensitivity from 4.25 to 4.75um where flame has high radiant energy. Since it is a non-contact measurement method, it allows safety measurement from distance, and no influence to shape of the flame.



Thermal image of general thermography camera (Temperature of flame is lower than actual value)

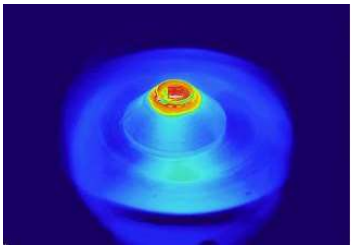


Thermal image of thermography camera for flame measurement (Accrete measurement of flame temperature)

●Through-Glass Measurement Model ***R300BP-TG***

R300BP-TG is a thermography camera for through-glass measurement with sensitivity at 3.46um which has high transmittance for quartz glass.

Appearance image of chamber

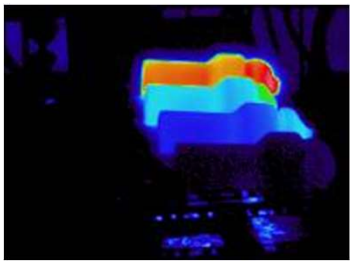


Specimen inside chamber (Thermal image)

●Glass Surface Measurement Model ***R300BP-OG***

R300BP-OG is a thermography camera for glass surface measurement with sensitivity from 5.2 to 7.4um where glass has high emissivity. It allows appropriate temperature control of molten glass with non-contact, safe and accurate temperature measurement.

Cooling process after glass molding



Cooling process after glass molding (Thermal image)

Primary Specifications and Features

	Item		Measurement through flame		Measurement of flame		Measurement through glass		Measurement of glass surface	
			R300BP-TF	R300BP-TF-D	R300BP-OF	R300BP-OF-D	R300BP-TG	R300BP-TG-D	R300BP-OG	R300BP-OG-D
Basic Performance	Infrared Detector		Uncooled Focal Plane Array (Microbolometer)							
	Spectral Range※1		3.7μm to 3.9μm		4.25μm to 4.75μm		3.0μm to 3.5μm		5.2μm to 7.4μm	
	Measuring Range※1		400° C to 1,500° C		600° C to 2,000° C		500° C to 1,000° C		400° C to 1,500° C	
	Sensitivity (NETD) (with SN improvement)		4.0° C at 400° C		1.5° C at 600° C		1.0° C at 500° C		1.0° C at 400° C	
	Accuracy※1, ※2		±4%		±4%		±4%		±4%	
	Frame Rate		60Hz	8.5Hz	60Hz	8.5Hz	60Hz	8.5Hz	60Hz	8.5Hz
	Detector Pixels		320(H) x 240(V)							
	Recording Pixels		Standard mode : 320(H) × 240(V) Super Resolution Mode : 640(H) × 480(V) ※3							
	Field of View		22° (H)×17° (V) (with Standard Lens)							
	Spatial Resolution		Standard mode : 1.2 mrad Super Resolution Mode : 0.8 mrad equivalent ※4							
	Focal Distance		50 cm to infinity (with Standard Lens)							
	Color Pallet		Olive, Rainbow, Iris, Brightness, Hot iron, Hot white, Hot black							
	Gradation		256/32/16/8 tones							
	Visual Camera		CMOS camera 3.1M pixels Fusion, Picture-In-Picture, Alpha Blending, Split-Screen							
	Display Function	Digital Zoom	1 to 4 times continuous zoom (with display positioning scroll)							
		Grid Overlay	Yes							
		Multi-Image-Display	Display 9 images (replay mode)							
Image Display	Auto Functions		Auto Scale, Auto Forcus, Full Auto							
	Image Quality Improvement		Averaging (with ghost rejection), Filtering, Edge Enhancement							
Measuring Functions	Point Temperature		10 Movable Points, Temperature search : MAX/MIN × 1 each, Delta T							
	Temperature Display in Assigned Region		MAX, MIN and AVG in Box (for 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 Function		Emissivity, Environment/Background, NUC							
		Emissivity	Multi-Point Correction, Emissivity Reverse Calculation							
Storage & Output	Storage Device		SD Card, Conforms to SDHC							
	Data Storage		Still Image : JPEG ※5 with temperature data with Visible Image							
		Super Resolution	Yes							
		Quick Panoramic Image	Horizontal Equivalent to 70° , Vertical Equivalent to 52°							
		Movie Recording	Max. 10fps in SD Card	Max. 8.5fps in SD Card	Max. 10fps in SD Card	Max. 8.5fps in SD Card	Max. 10fps in SD Card	Max. 8.5fps in SD Card	Max. 10fps in SD Card	Max. 8.5fps in SD Card
		Interval Recording	3 sec to 60 mn interval, with Visible Image							
		External Trigger	Yes							
		Voice Recording	30sec Recording, replay per a Thermal image							
		Text Annotation	Annotate up to 128 Characters with each Thermal Image Import Characters from SD Card							
	Interface		USB2.0※6, Video OUTPUT, Alarm Output, External Trigger Input							
Others	Display		3.5" LCD Monitor (with tilt and brightness adjustment), Color View Finder (with tilt adjustment)							
	Auxiliary	Laser Pointer	Yes(Class-2 Red color)							
		LED Light	Yes							
		Wired Remote Control Unit	Yes							
	Environment Resistance	Operating temperature / Humidity	-15° C to 40° 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): excluding Protection 9.8m/sec2 (1G), 98m/sec2 (10G): including Protection							
		EMC	Conforms to CE regulations (Class A)							
		Dust & Splash proof	Protection class IP54 equivalent							
	Battery Operations		2 hours (Typ.)							
	AC Power		100V - 220V AC, 50/60Hz							
	Dimensions		Approx. H121mm×W105mm×D195mm (excluding Protection)							
	Weight		Approx. 1.5kg (inclouding Battery Pack)							
	Standard Accessories		AC Adapter ×1, Battery Charger ×1, Rechargeable Li-Ion Battery ×1, SD Card ×1, USB Cable ×1, Wristband ×1, Grip Belt ×1, Software ×1, Operation Manual ×1, and Carrying Case ×1							
	Standard Software		Infrec Analyzer NS9500 Professional							

※1 Please contact us for custom orders other than the above. ※2 Temperature accuracy is the value for our black body. ※3 Still Image Only
※4 This increased resolution results from detecting characteristic within all acquired by the SR process and removing such effects as those caused by hand vibration.
※5 SAX format for USA and European countries. JPEG is not available.
※6 R300BP-TF-D/R300BP-OF-D/R300BP-TG-D/R300BP-OG-D:Thermal Image Max 8.5Hz, Visual Image Max 7.5Hz

■Notes on this product

Accuracy of through-flame measurement, flame measurement, through-glass measurement, glass surface measurement are sometimes subject to custom filter and technical adjustment depending on measuring object. Since we have long years of experince in wide variety of field measurement, please contact with our sales including techinical assistance for your requirement.

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.
Listed specifications, appearance and design are subject to change without notice.
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).

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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:

CAT.NO. 430-038-E 2006-00-Rv2