Avio

Infrared Thermal Imaging Camera

For Passing Through Flame

InfReC R300BP-TF

Through Flame | Uncooled | Light Weight And Compact

Maintenance-free operation and detecting 3.8μm wavelength band thanks to Japanese-made uncooled infrared detector!

- Maintenance of a cooling mechanism is unnecessary

Making Quick Shot in a harsh environments by a infrared camera with outstanding mobility and operability in the field.

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

Folding protection shield included as standard

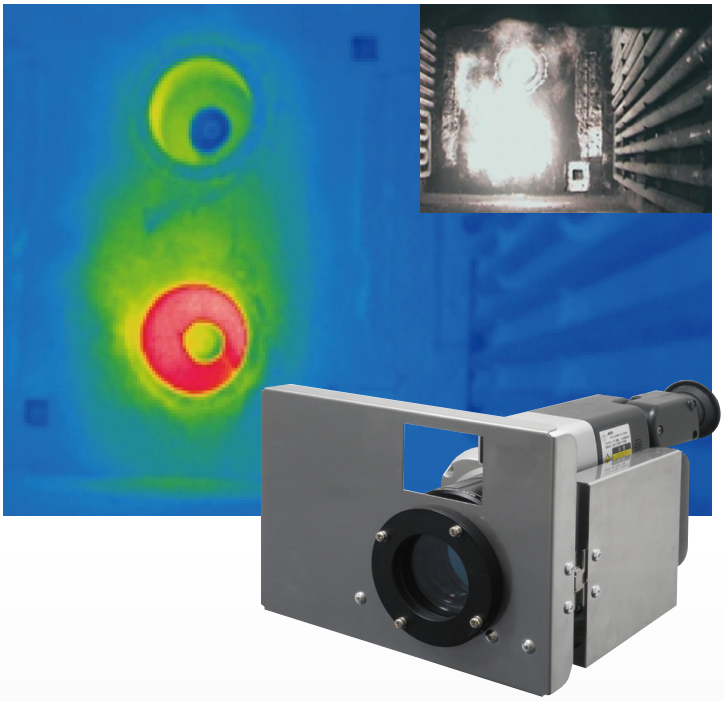
- Imaging is possible while assuring the safety of the operator from intensive radiant heat

Combination with relay lens※2 inserted in the furnace is available

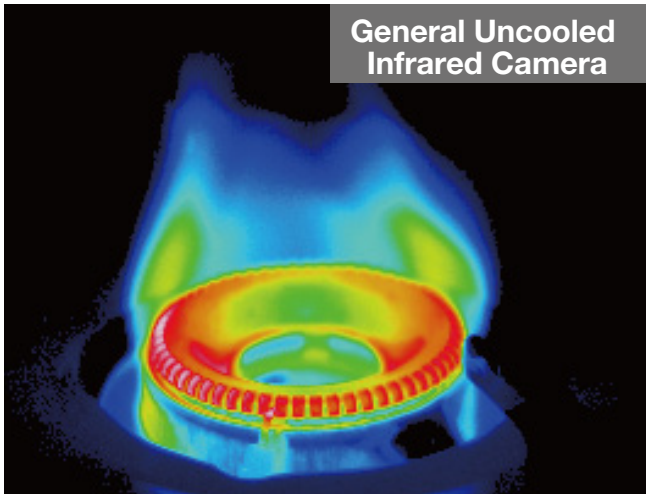
- A wide field of view (Up to 100°) is available through a furnace wall window.

※1:It is including a battery pack and excluding protection shield
※2:Relay lens is custom made for customer

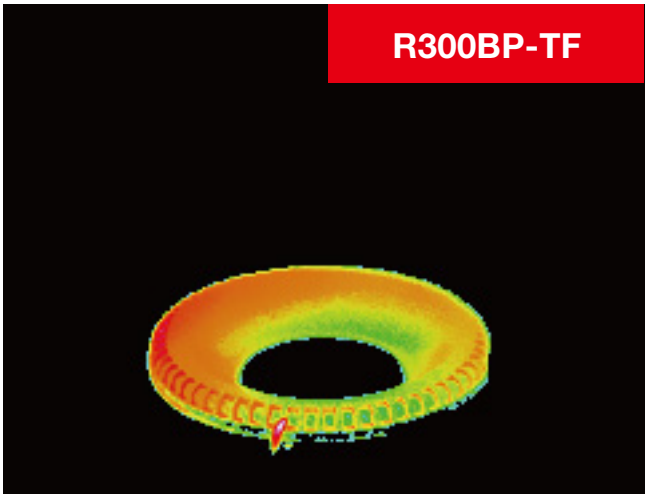
Sharp Image Passing Through Flame inside of Coal and Oil Refinery Furnaces!



The flame is eliminated by the "Japanese-made" infrared detector with a passing-flame filter with outstanding sensitivity at 3.8μm wavelength band



In the wavelength range (8 to 14μm) of the general uncooled infrared detector, the influence of the flame is clearly present.



By stretching the sensitivity of the "Japanese-made" uncooled detector to the short-wavelength region, it is possible to eliminate the flame influence by using a 3.8μm passing-through-flame filter.

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Measuring data in harsh environments exactly and safely

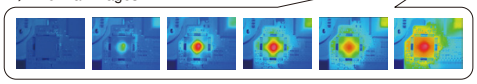
Protection shield included as standard

Movable LCD monitor and View Finder

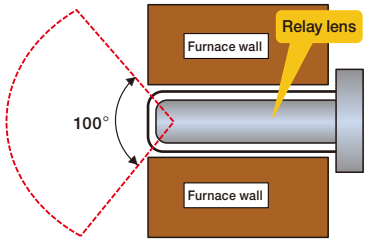
LCD monitor enable to capture images at various angles

Thermal movie images can be recorded on SD card at max 10Hz and can be analyzed by software later.
In this manner, required data can be recorded in a short time.

▶Thermal Images



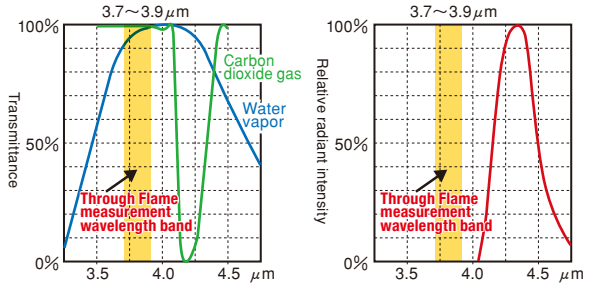
Combination with relay lens※1 insertable in the furnace



A field of view up to 100° can be covered

※1：Relay lens is custom made for customer

The principle of Through Flame IR image and feature points of R300BP-TF



When fuel gas (Hydrocarbon Gas) burns, the infrared energy is radiated from not only flame but also H_2O and CO_2.
For above condition, taking thermal image through flame by infrared thermal imaging camera (IR camera) is required following conditions;
1.Select absorb-less band of wavelength by Gas (CO_2 and water vapor) that is generated when fuel gas burns.
2.Select wavelength band as far away from Flame Infrared Energy radiant intensity wave length as possible.
3.Use Infrared Detector which has sensitivity with above both conditions.

Therefore, the suitable wavelength band for taking thermal image passing through flame is 3.8μm wavelength band.
Generally, this wavelength band is detected by cooled type infrared detector, however, this type IR camera is very expensive and its cooler requires maintenance at constant time usage.
Avio achieved success to stretching sensitivity to short-wavelength band by "Japanese-made" Uncooled type infrared detector. Herewith, we realized to reducing-cost and maintenance-free of R300BP-TF.

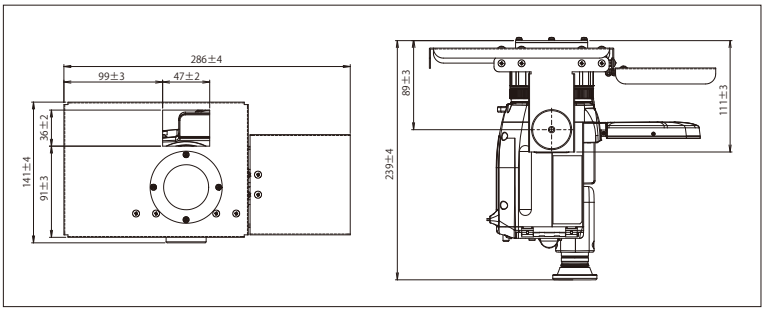
*Note: Depending on combustion gas kinds, R300BP-TF has possibility that cannot eliminate flame, and it influence to measuring result. We recommend to test by Demo-Unit before purchasing.

Primary Specifications and Features

	Item		R300BP-TF
Basic Performance	Infrared Detector		Uncooled Focal Plane Array (Microbolometer)
	Spectral Range		3.7 to 3.9μm
	Measuring Range		400℃ to 1500℃
	Sensitivity (NETD)		4℃ at 400℃ (with S/N improvement)
	Accuracy		±4℃
	Frame Rate		60Hz
	Detector Pixels		320 (H) × 240 (V) pixels
	Recording Pixels		Standard mode : 320 (H) × 240 (V) Super Resolution mode : 640 (H) × 480 (V)*1
	Field of View		22° (H) × 17° (V) (with Standard Lens)
	Spatial Resolution		Standard mode : 1.2 mrad Super Resolution mode : 0.8 mrad equivalent*2
	Focal Distance		50cm to infinity (with Standard Lens)
Image Display	Auto Functions		Auto Scale, Auto Focus, Full Auto
	Image Quality Improvement		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 (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
Storage & Output	Storage Device		SD card, Conforms to SDHC
	Data Storage		Still Image : JPEG with temperature data with Visible Image
		Interval Recording	3 sec to 60 min interval, with Visible image
		Movie Recording	Max. 10fps in SD Card
		Voice Recording	30sec Recording, replay per a Thermal image
	Interface		USB2.0, Video Output, Alarm Output, External Trigger Input
Others	Display		3.5" LCD Monitor (with tilt and brightness adjustment), Color View Finder (with tilt adjustment)
	Environment Resistance	Operating temperature/ Humidity	0°C to 40°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		2hours (Typ.), 4hours with optional "Portable Power"
	AC Power		100V – 220V AC, 50/60Hz
	Dimensions		Approx. H121mm × W105mm × D195mm (excluding Protection)
	Weight		Approx. 1.5kg (including Battery Pack)
	Standard Software		InfReC Analyzer NS9500 Professional

*1 Still Image Only
*2 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.

Dimensions (Including Protection Shield)



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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.

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