TAMRON
New eyes for industry

World' First*

High-Performance Far-Infrared Zoom Lens Series With Built-in Optical Image Stabilization System VC

* Far-IR camera module, December 2013. Source: Tamron Co., Ltd.

15-45mm F1.4 (Model SD005)
35-105mm F1.0 (Model SD006)

Optical Zoom and Optical Image Stabilization System Realize High Picture Quality

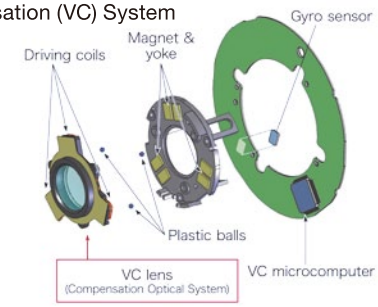
Conditions such as wind and ground vibration normally produce camera shake that makes it difficult to obtain quality images. Tamron' s high-performance far-infrared zoom lenses combine an optical zoom with an optical image stabilization system to suppress deterioration of picture quality due to camera shake. These features differ from electronic control (digital zoom, digital image stabilization processing, etc.), and allow the full potential of the image sensor to be realized.
The ability to capture proper images without image quality deterioration lets you take full advantage of the sensing capabilities of far-infrared cameras and helps to create highly reliable surveillance systems.

Optical Image Stabilization System

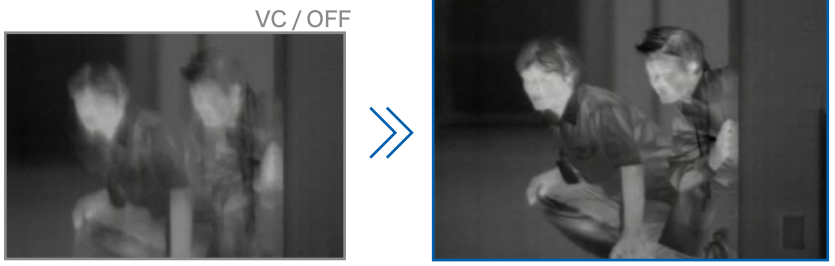
The built-in optical image stabilization system (VC: Vibration Compensation) is a world first for far-infrared camera lenses. This technology is similar to the image stabilizer functions used in interchangeable lenses for single-lens reflex cameras, which are a core-competence of Tamron, and provides high picture quality even in installation environments subject to constant shaking due to the effects of wind or ground vibration*.

* Vibration from moving vehicles, wind, camera mounts, etc.

Cutaway of the Optical Vibration Compensation (VC) System



Comparative Images of VC ON and OFF



Optical Zoom

Two types of zoom lenses are available with a focal length of 15-45 mm and 35-105 mm to cover the surveillance ranges most frequently used for security monitoring. Unlike fixed focal length lenses, the field of view can be precisely set for zoom lenses, support cases when the installation environment and monitoring range change.

Active Athermal Compensation

Tamron' s active athermal compensation function helps to provide the best and most stable images under various environmental conditions, including changes in temperature after sunset or seasonal variations. Typical "athermal compatible" lenses perform compensation by mechanical means, but Tamron lenses use temperature sensors to apply the ideal electronic compensation according to the temperature.

Electronic Focus

Tamron' s zoom lenses use the IF (internal focusing) method which reduces the travel distances of the focus lens group, letting you focus in the shortest time possible.
IF, combined with the spot AF feature, allows you to pinpoint and quickly focus on subjects.

SD005

Optical specs		
Spectral wave length		8 ~ 14μm
Focal length		15-45mm
F number		F/1.4
Zoom ratio		3-times magnification
Flange back distance		12.0mm (distance from mount reference surface to image plane (in Ge))
Detector package window		(Ge) t=1.0mm
Back focus length		WIDE : 18.27mm / TELE : 16.1mm (in air/inf) WIDE : 19.02mm / TELE : 16.85mm (in Ge)
Effective image circle diameter		ø11mm
Field of view (Note 1)	H	WIDE : 29.3° / TELE : 9.5°
	V	WIDE : 21.8° / TELE : 7.1°
	D	WIDE : 39.8° / TELE : 12.5°
Focus method		Internal focusing method
MOD (Minimum object distance)		WIDE : 1.0m / TELE : 1.0m
Max object distance (Note 2)		WIDE : 308m / TELE : 954m

Structure		
Max barrel diameter/length		ø98mm x 81mm
Mass		740g
Optical image stabilizer		Yes
Optical zoom system		Electrical
Focus system		Electronic
Athermal compensation		Yes
Mount type		Tamron thermal bayonet
Electrical specs		
Power supply	For logic board	+3.3V
	For motor drive	+5.0V
Current consumption		1A or less
Interface		SPI (serial) interface
Environmental specs		
Range of guaranteed performance		-10°C–50°C 20–90%RH
Range of functionality		-20°C–60°C 20–90%RH

SD006

Optical specs		
Spectral wave length		8 ~ 14μm
Focal length		35-105mm
F number		F/1.0
Zoom ratio		3-times magnification
Flange back distance		12.0mm (distance from mount reference surface to image plane (in Ge))
Detector package window		(Ge) t=1.0mm
Back focus length		WIDE : 33.04mm / TELE : 30.84mm (in air/inf) WIDE : 33.79mm / TELE : 31.59mm (in Ge)
Effective image circle diameter		ø11mm
Field of view (Note 1)	H	WIDE : 12.3° / TELE : 4.1°
	V	WIDE : 9.2° / TELE : 3.1°
	D	WIDE : 15.5° / TELE : 5.1°
Focus method		Internal focusing method
MOD (Minimum object distance)		WIDE : 2.0m / TELE : 5.0m
Max object distance (Note 2)		WIDE : 740m / TELE : 2232m

Structure		
Max barrel diameter/length		ø120mm x 159mm
Mass		1910g
Optical image stabilizer		Yes
Optical zoom system		Electrical
Focus system		Electronic
Athermal compensation		Yes
Mount type		Tamron thermal bayonet
Electrical specs		
Power supply	For logic board	+3.3V
	For motor drive	+5.0V
Current consumption		1A or less
Interface		SPI (serial) interface
Environmental specs		
Range of guaranteed performance		-10°C–50°C 20–90%RH
Range of functionality		-20°C–60°C 20–90%RH

(Note 1) The fields of view have been calculated based on a sensor size of 7.52mm (w) x 5.64mm (h) (9.4mm diagonal). (QVGA 23.5μm pixel pitch)
(Note 2) The max object distance (detection) is a theoretical value calculated for seeing human sized objects based on Johnson's Criteria under the assumption that QVGA-23.5μm pixel pitch sensor is used. It is not an actual measured value.
*Product specifications are subject to change without notice. *For the above mentioned lens series, we recommend cameras from Nippon Avionics Co., Ltd. *Custom-made lenses are available according to customers' requested design/manufacturing specifications. Please feel free to inquire.

⚠ Caution : Please read the instruction manual carefully before using lenses.

TAMRON®
Manufacturer of precise and sophisticated optical products for a broad range of industries.

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- The content of this catalog is current as of June 2013.
- Product specifications, appearance and performance are subject to change without notice.

Quality Assurance Activities : At Tamron, quality management activities are performed in compliance with ISO9001:2000 not only to assure product quality but to enhance customer satisfaction.
Environmental Protection : We recognize the significance of our social responsibilities. Tamron promotes corporate activities that protect the earth's environment through the establishment of a quality assurance system that is compliant with ISO14001.

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