

World's
Lightest
in its
Class*

LWIR 3X Zoom Lens for VGA (17 μ m Pixel Pitch) Detectors

35-105mm [Model LVZ3X3516N
Model LVZ3X3516A]

* Photo shows Model LVZ3X3516N



50-150mm [Model LVZ3X5016N]



New

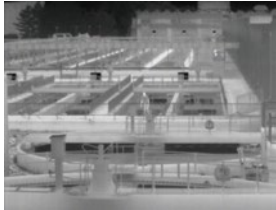
Revealing a 3X LWIR zoom lens for a totally new surveillance system

This new product has the lightest* weight with a compact size that rivals any commercially available fixed focal telephoto lens. Designed in a compact chassis that eliminates development cost for peripheral equipment. Lenses are offered in two types (three models in all): one type for a focal length range of 35-105mm and another for 50-150mm. Selecting a lens matched with scenes of application assures cost-effective performance. The 3X optical zoom with superb optical performance and acclaimed user utility assures a totally new surveillance system that is ideal for their application.

* Among commercially available LWIR zoom lenses with focal lengths of the similar type. Based on market research by Tamron, Apr. 2016.

Optical zoom

Independent of changes in the region of interest or in the environment of the camera installation, 3X optical zooming (35-105mm / 50-150mm) assures precise field of view. Optical zooming, unlike artifacts-prone digital zooming, delivers quick-and-accurate target capture with uncompromising high-resolution and high-contrast images, essential for mission-critical surveillance.



Optical zoom 35mm



Optical zoom 50mm



Optical zoom 70mm



Optical zoom 105mm



Optical zoom 150mm

World's Lightest in its Class*

Compared to ordinary lenses with a similar telephoto range, the compact body size gives superior advantage for camera integration for existing gimbal systems, not to mention conventional camera housings. With the world's lightest gross weight*: 490g (35-105mm zoom type) and 1,170g (50-150mm zoom type), the dynamic load on the pan & tilt unit or gimbal system is significantly reduced, which will ensure increased longevity of the electro-mechanical system.

* Among commercially available LWIR zoom lenses with focal lengths of the similar type. Based on market research by Tamron, Apr. 2016.

Focusing Mechanism

The focus drift due to changes in external temperature is eliminated by an active athermal feature (motorized focus correction mechanism) that automatically corrects the focal length using a built-in circuit and software. Combination of internal focusing in the optical system and a stepping motor employed in the drive mechanism achieves smooth, fast, and high-precision zooming and focusing performance.

Water and dustproof construction

Sealing rated at IP67, and with diamond-like carbon (DLC) coating on the front element, there is no need for a germanium window that was conventionally used to protect the lens, resulting in reduced overall cost for the surveillance system.

Ease of handling

The lens comes with two types of coating; DLC coating on the front element coupled with IP67-compliant construction; Or, with AR coating. Serial communication is employed for controlling the focus and zoom, which facilitates integration with a majority of camera systems.

Model		LVZ3X3516N	LVZ3X3516A	LVZ3X5016N	
Optical specs	Spectral wave length	8-14 μ m		8-14 μ m	
	Focal length	35-105mm		50-150mm	
	F number	F/1.6		F/1.6	
	Zoom ratio	3X		3X	
	Flange back focal distance	9.7mm \pm 0.3mm (in Si) (Barrel rear edge to image plane)		9.7mm \pm 0.3mm (in Si) (Barrel rear edge to image plane)	
	Detector package window	(Si) t=0.66mm		(Si) t=0.66mm	
	Back focal distance	WIDE	28.21mm		28.21mm
		TELE	28.10mm		28.02mm
	Effective image circle dia.	$\geq\phi$ 14.5		$\geq\phi$ 14.5	
	FOV (Note *1)	H	WIDE : 18.0° / TELE : 5.9° (Note *1)		WIDE : 12.5° / TELE : 4.1° (Note *1)
V		WIDE : 14.3° / TELE : 4.8° (Note *1)		WIDE : 10.0° / TELE : 3.3° (Note *1)	
D		WIDE : 23.1° / TELE : 7.6° (Note *1)		WIDE : 16.1° / TELE : 5.3° (Note *1)	
Focusing system	Internal focusing system		Internal focusing system		
MOD (Minimum object distance)	WIDE : 7.0m / TELE : 7.0m		WIDE : 7.0m / TELE : 7.0m		
Max. object distance	WIDE : 1,013m / TELE : 3,083m (Note *2)		WIDE : 1,459m / TELE : 4,408m (Note *2)		

(Note *1) The field of view have been calculated based on a sensor size of 10.88mm(V) x 8.7mm(H) (13.9mm diagonal). (VGA 17.0 μ m 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 VGA-17 μ m pixel pitch sensor is used. It is not an actual measured value.

*Product specifications are subject to change without notice. *Custom-made lenses are available according to customers' requested design/manufacturing specifications. Please feel free to inquire.

Model		LVZ3X3516N	LVZ3X3516A	LVZ3X5016N	
Mechanical	Max. barrel dia. x length	ϕ 82mm x 130.1mm		ϕ 114mm x 164mm	
	Weight	490g		1,170g	
	Optical image stabilization	N/A		N/A	
	Optical zoom	Motorized		Motorized	
	Focus control	Motorized		Motorized	
	Active Athermalization	YES		YES	
	Mount type	threaded, M34 x P0.5		threaded, M34 x P0.5	
	Electronic/Electric	Power supply	9V DC		9V DC
		Power consumption	\leq 0.7A		\leq 0.7A
		Communication	Full duplex asynchronous serial communication		Full duplex asynchronous serial communication
Reliability	Operating temp.(Performance)	-10°C ~ 70°C		-10°C ~ 70°C	
	Operating temp.(Function)	-20°C ~ 80°C		-20°C ~ 80°C	
	Water & dust proof	IP67 (front lens only)		IP67 (front lens only)	
	Front element coating	DLC	AR	DLC	

TAMRON

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• The content of this catalog is current as of June 2016.
• Product specifications, appearance and performance are subject to change without notice.



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