



Theia Technologies' lenses are high quality precision optical lenses designed for megapixel class cameras and made to current ISO 9001 standards.

## Notices and Safety information

- Do not look through the lens towards strong illumination such as the sun.
- The mounting thread may be sharp. Handle the lens carefully to avoid injury.
- The lens is a precision optical assembly and should not be subject to excessive vibration or shock.
- Do not disassemble the lens, there are no serviceable parts inside. If the lens requires service, see the warranty and return section.
- In some situations, water vapor from the air may condense on the lens, such as rapidly moving from a cold place to a warm place. Avoid this condensation by letting the lens adjust to the ambient temperature before removing the lens caps or installing onto a camera.
- Do not touch the glass elements of the lens. To clean the lens, refer to the **routine service** section.
- Do not allow the lens to become wet.
- Do not use organic solvents on the lens such as thinner or acetone.

## Image inversion with Linear Optical Technology®



Theia Technologies' Linear Optical Technology® (LOT) which allows the ultra-wide angle lens to maintain very low distortion inverts the image. This requires the camera to be mounted upside down or the image to be inverted electronically. See your camera operating instructions to invert the image electronically.

## Installation

Most Theia varifocal lenses have a slip ring CS mount which allows the user to rotate the lens up to 320° after mounting. The slip ring is tensioned and will have more resistance to lens rotation. The slip ring has a hard stop that allows the lens to be removed. Do not over-torque the mount when tightening. If the lens has an auto-iris or P-iris, plug the cable into the receptacle on the camera.

## Iris operation

### Manual iris lens

Adjust the iris opening by loosening the thumb screw and rotating until the desired illumination is allowed through the lens. To allow more illumination, open the iris by rotating counterclockwise (looking at the front of the lens). Tighten the thumb screw to hold the iris in place.

### Auto-iris and P-iris lenses

The iris operation is controlled electronically by the camera with DC auto-iris control or precision iris (P-iris) control. The auto-iris cable should be connected to the camera's iris cable receptacle. Refer to your camera operating instructions to set the camera's iris control the proper type of iris control.



DC auto iris	Pin	Function
	1	Control -
	2	Control +
	3	Drive +
	4	Drive -
P-iris	Pin	Function
	1	B+
	2	A+
	3	A-
	4	B-

## Adjusting lens focus

Adjust focus using this procedure:

- For auto-iris lens; place a dark neutral density filter in front of the lens to fully open the auto-iris for focusing.
- For manual iris lens, make sure the iris is fully opened by rotating the iris ring towards "open".
- Loosen the focus thumbscrew, rotate the focus ring until the proper focus is achieved, and then tighten the thumb screw to lock the focus in place.
- For the MY23F and SY23F: If the lens does not rotate easily, check that the 3 set screws are loose. When focus is achieved, tighten one or more set screws to lock the focus.

If focus cannot be achieved, you may have to adjust the back focus of the camera. Start by positioning the lens focus to the middle of the focus range. Using the camera operating instructions, adjust the camera back focus to bring the image into focus. Now slightly readjust the lens focus ring to find the best overall focus.

If the lens is still not in focus or the camera does not have a back focus adjustment, verify that there is not a C-CS adapter ring between the camera and lens (some CS-mount cameras come with this additional part so a C-mount lens can be used). This C-CS adapter is not required for lens models starting with "SY" or "SL".

## Adjusting zoom on varifocal lenses

Adjust zoom using this procedure:

- Loosen the zoom thumbscrew, rotate the zoom ring until the desired image size is achieved, and then tighten the thumb screw to lock the zoom in place.
- On some varifocal lenses the image will go out of focus when the zoom ring is adjusted. Simply refocus the lens using the focus adjustment procedure.

## Compliance

All products listed in this manual comply with applicable requirements for RoHS and CE marks. Compliance certificates are available on request.

## Routine service

Remove any dust or dirt accumulated on the lens with compressed air or a blower brush.

To remove oil or fingerprints from the lens use a soft lint-free cloth or lens tissue dampened with alcohol or lens cleaning fluid. Wipe lightly in a spiral motion starting from the center of the glass element and working towards the edge. Repeat as necessary with a fresh area of cloth or lens cleaning tissue.

## Lens specifications

Lens specifications are available on Theia's website at [www.TheiaTech.com](http://www.TheiaTech.com).

## Patents

Theia Technologies has multiple issued and pending US and international patents for lens technologies.

## Contact information

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## Lens information

Lens model	Focal length	LOT design	Day/Night	Iris type	Mount type
SY125A	1.3mm	Yes	No	Auto iris	CS*
SY125M				Manual iris	CS*
MY125M				Manual iris	C*
MY23F	2.3mm	Yes	Yes	Fixed iris	C/M12*
SY110A	1.7mm	Yes	Yes	Auto iris	CS*
SY110M				Manual iris	CS*
MY110A				Auto iris	C*
MY110M				Manual iris	C*
SL183A	1.8mm – 3mm	Yes	Yes	Auto iris	CS
SL183M				Manual iris	CS
ML183A				Auto iris	C*
ML183M				Manual iris	C*
SL940A	9mm – 40mm	No	Yes	Auto iris	CS
SL940P				P-iris	CS
SL940M				Manual iris	CS
SL410A	4mm – 10mm	No	Yes	Auto iris	CS
SL410P				P-iris	CS
SL410M				Manual iris	CS
ML410A				Auto iris	C
ML410M				Manual iris	C
ML610M	6mm – 10mm	No	Yes	Manual iris	C
SL1250A	12mm-50mm	No	Yes	Auto iris	CS
SL1250P				P-iris	CS
SL1250M				Manual iris	CS

\*no slip ring available