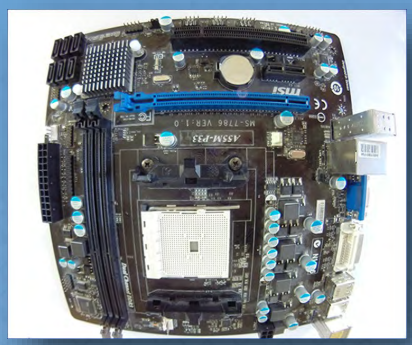
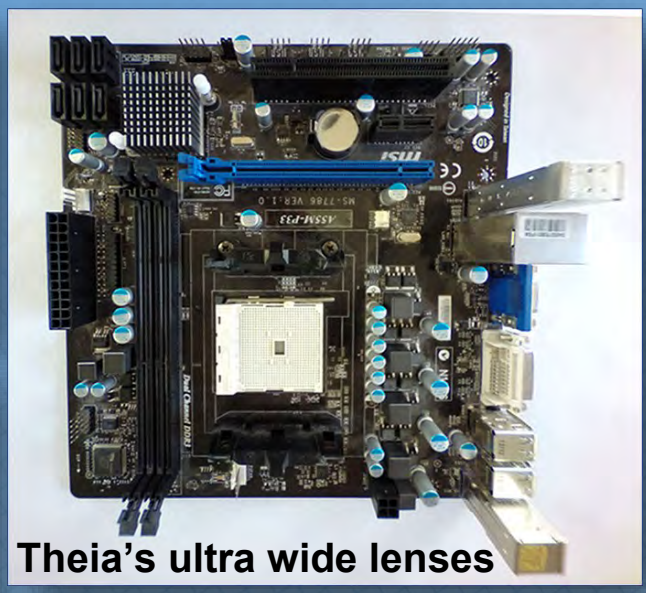
Theia®
TECHNOLOGIES



Typical wide angle lens



Theia's ultra wide lenses

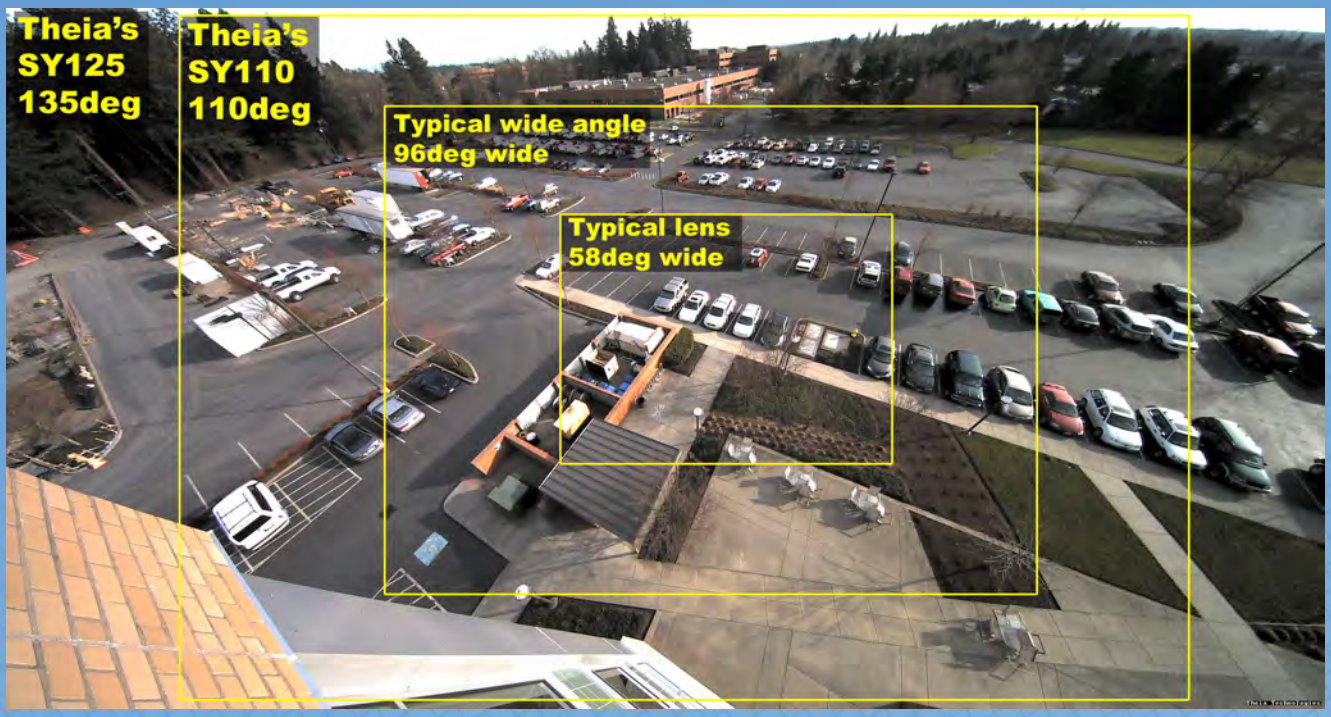
Theia's ultra wide lenses

Linear Optical Technology®

Theia's family of ultra wide angle lenses use patented **Linear Optical Technology®** to create ultra-wide fields of view and correct barrel distortion, keeping straight lines straight in the image. The award-winning technology increases resolution at the image edge and improves the probability of recognizing and identifying an object without software and its inherent latency, making it ideal for any application requiring real time imaging of wide fields of view without distortion, even from close range.

Ultra wide field of view

Theia's lenses provide an ultra wide field of view of up to **135º horizontally**, as much as **70% greater field of view** than other wide angle lenses available, allowing the user to take full advantage of the capabilities of today's megapixel cameras. With a multi megapixel camera, Theia's lenses enable a greater HFoV with the same or fewer cameras. Theia's lenses allow installation and maintenance of fewer cameras while still covering a large surveillance area.



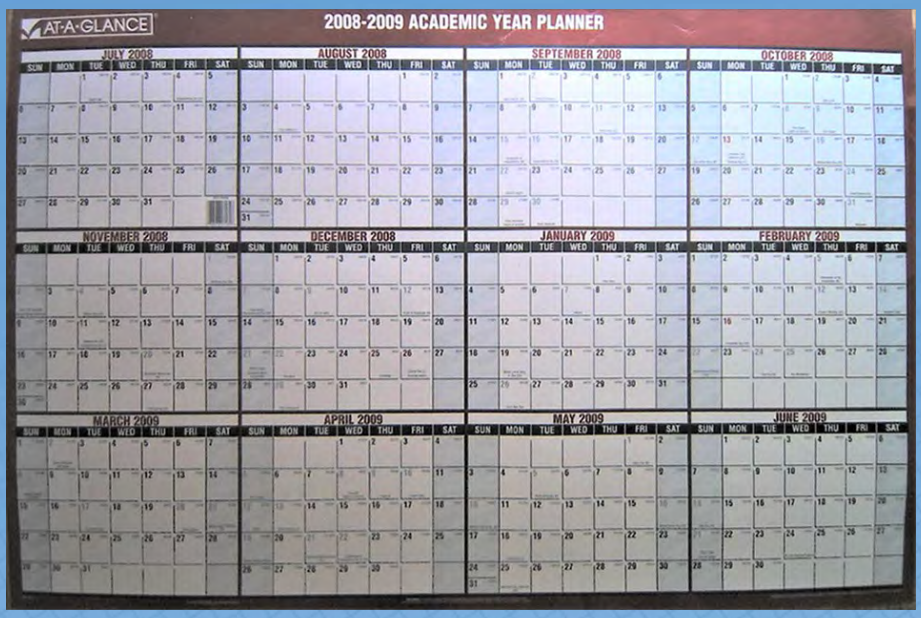
Distortion Correction

Theia's patented **Linear Optical Technology®** is a real time, all-optical distortion correction technology that creates an ultra wide field of view while correcting barrel distortion in the lens itself, without the use of software or its inherent latency. Other wide angle lenses show barrel distortion, compressing the image at the edges and reducing resolution; Theia's technology maintains linearity in the image increasing object size and resolution at the image edges, increasing the probability of recognition and identification compared to other wide angle lenses.

Ultra wide Theia lens

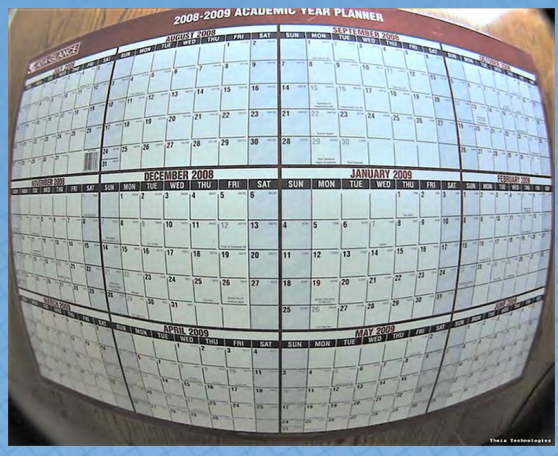
Typical fisheye lens

Distortion Correction



Lens with Linear Optical Technology®

Typical Wide Angle Lens



NIR correction with Multi-Megapixel Resolution

Some models are offered with **NIR correction** from 435nm to 940nm, focusing visible and NIR spectrum light to the same image plane with minimal focus shift. When switching from daylight to NIR illumination, Theia's IR corrected lenses maintain their megapixel resolution performance. The optimized field flatness and IR correction for **Day/Night** allows the image to be in sharp focus from center to edge under many different light sources. Theia's lenses use the latest aspherical lens manufacturing technology, low dispersion glass types and proprietary anti-reflective coatings to create this combination of multi megapixel resolution and NIR performance, a combination of features found in few other lenses on the market today.

www.TheiaTech.com +1-503-570-3296

Winner, Security Sales and Integration Magazine's Show Stealer award 2007

Winner, Security Industry Assoc. (SIA) New Product Showcase award at ISC West 2008

Finalist, Government Security News (GSN) Homeland Security Awards 2009

Winner, Security Today New Product of the Year (MY23F), 2022

Winner, VSD Innovator's Awards - Bronze Honoree, 2023

Winner, Security Today Govies Government Security Award - Platinum, 2023

Lens models	SY125A/M	MY125M	MY125M-E*	SY110A/M	MY110A/M	SL183A/M	ML183A/M	MY23F
Iris types	DC Auto/ Manual	Manual	Manual	DC Auto/ Manual	DC Auto/ Manual	DC Auto/ Manual	DC Auto/ Manual	Fixed
Mount type	CS	C	C	CS	C	CS	C	C/M12
Focal length	1.28mm			1.67mm		1.8-3.0mm		2.3mm
Largest Sensor	1/2.5"			1/2.5"		1/2.3"		1/1.8"
Field of view	Fixed up to 135º			Fixed up to 120º		Varifocal 115º - 88º		116º
Resolution	200 lp/mm			160 lp/mm		200 lp/mm		200 lp/mm
Focus Range	10cm to ∞			20cm to ∞		30cm to ∞		50cm to ∞
Distortion	<3%			<1%		<1%		<1%
F/#	F/1.8 to close			F/1.8 to close		F/1.8 to close		F/2.2
IR Correction	No			435 - 940nm		435-940nm		435 - 940nm
Lens length to mount	58.9mm	53.9mm	55mm	56mm	51mm	49.3mm	44.3mm	44mm
FMT 3555 Compatible	No**			Yes		No**		Yes

* MY125M-E ruggedized version

** In multi-spectral applications when different spectrum filters are required, Theia's FMT-3555 filter mount accessory can be used to attach optional filters. Theia's FMT-3555 filter mount accessory is compatible with SY110, MY110, and MY23F models. It is also possible to place a small filter between the rear of the lens and camera sensor on all lens models. Filters sold separately.

Some applications benefitting from ultra wide, no distortion, megapixel lenses:

- More **accurate** object **position mapping**
- **Faster** and less computationally intensive **image stitching**
- Improved **situational awareness** for robotic arms
- Real-time **navigation** of Autonomous Mobile Robots
- Ultra wide fields of view from **close distances**
- Improved **mapping** of flat panels & large sheet goods
- Monitoring **traffic flow** from mobile traffic control centers
- Predicting **queue backup** at retail POS stations
- **Counting passengers** at airports and ferry terminals
- Detecting **shrinkage** in retail environments
- Enhanced **body mechanics** tracking and observation in human motion analysis
- Reduced **muggings** and theft from ATMs
- Decreased **car theft** and break-ins in parking lots
- **Verifying transactions** in casino cages
- Deterring **copper theft** from vehicles & power infrastructure
- Recording **unauthorized access** across fence lines & borders
- Encouraging **safety compliance** in assembly & sorting areas
- Minimized **loitering** and **vandalism** in public spaces
- Dissuading **drive-offs** at gas stations
- Discouraging **vandalism** on campus & in public areas
- Eliminating **blind spots** in corrections environments
- Capturing **red light violations** and crashes at intersections