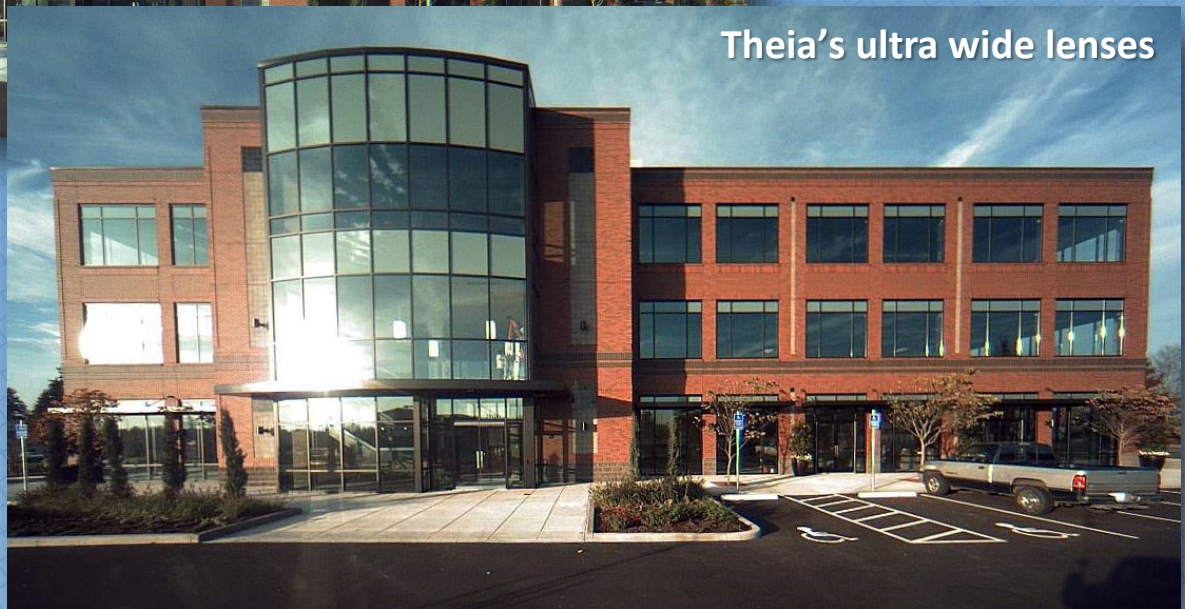


# Theia<sup>®</sup>

## TECHNOLOGIES



Typical wide angle lens



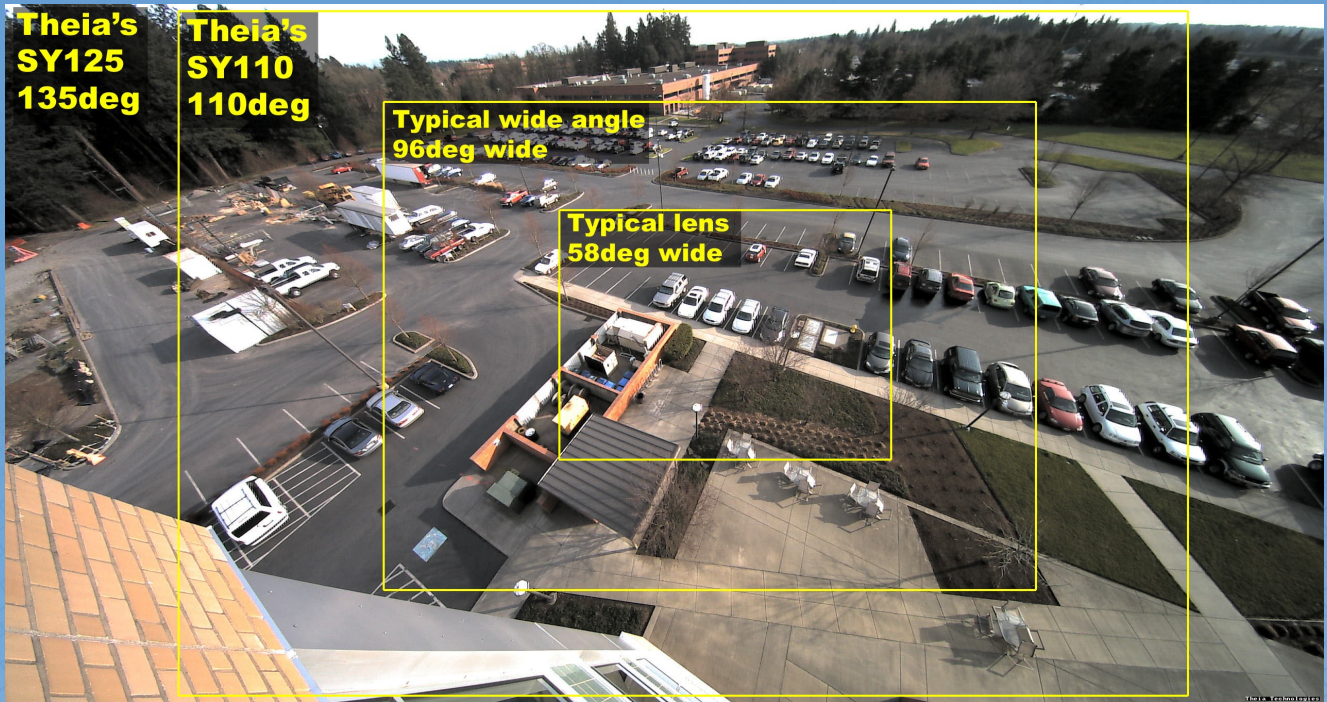
Theia's ultra wide lenses



Theia's family of ultra wide angle lenses use patented **Linear Optical Technology<sup>®</sup>** 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 compared to traditional wide angle lenses. The all-optical distortion correction is done without software and its inherent latency, making it ideal for real-time vision and robotics applications.

## Ultra wide field of view

Theia's lenses provide an ultra wide field of view of up to **135° 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.

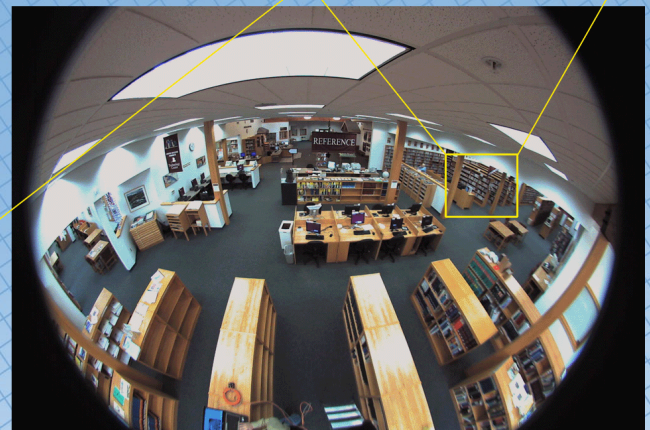


Theia's patented **Linear Optical Technology®** is a real time, all-optical distortion correction technology that creates an ultra wide field of view while correcting barrel distortion in the lens itself, without the use of software or its inherent latency. Other wide angle lenses show barrel distortion, 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.

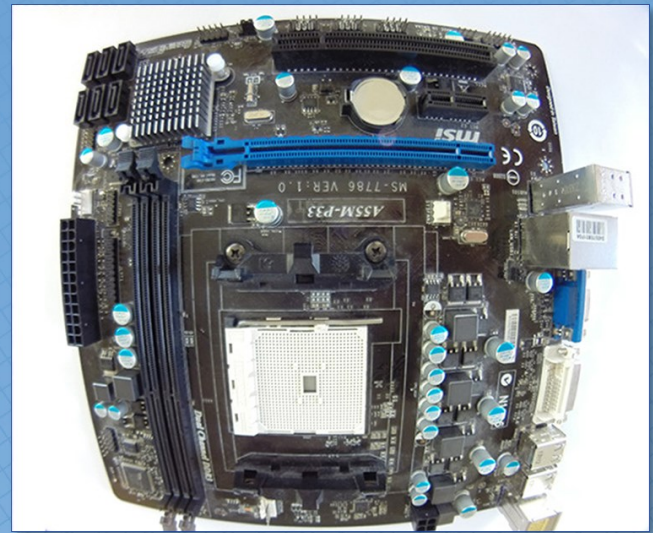
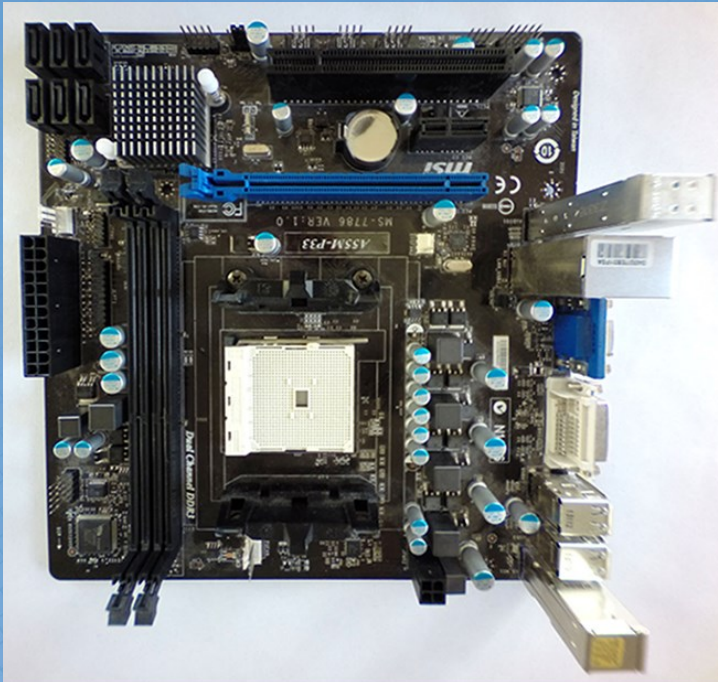
## Distortion Correction



Ultra wide Theia lens



Typical fisheye 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.



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	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 135°			Fixed up to 120°		Varifocal 115° - 88°		116°
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	59mm			56mm		50mm	45mm	60.8mm

\* MY125M-E ruggedized version

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

- More **accurate** object **position mapping**
- Detect **shrinkage** in retail environments
- Discourage **vandalism** on campus & in public areas
- Eliminate **blind spots** in corrections environments
- **Faster** and less computationally intensive **image stitching**
- Improve **mapping** of flat panels & large sheet goods
- Capture **red light violations** and crashes at intersections
- Dissuade **drive-offs** at gas stations
- Reduce **muggings** and theft from ATMs
- Decrease **car theft** and break-ins in parking lots
- **Verify transactions** in casino cages
- Deter **copper theft** from vehicles & power infrastructure
- Capture ultra wide fields of view from close distances
- Record **unauthorized access** across fence lines & borders
- Monitor **traffic flow** from mobile traffic control centers
- Encourage **safety compliance** in assembly & sorting areas
- Minimize **loitering** and **vandalism** in public spaces
- Predict **queue backup** at retail POS stations
- **Count passengers** at airports and ferry terminals
- Improve **situational awareness & navigation** of unmanned vehicles