

# Sunex

Excellence in Digital Imaging Optics

1NCH™ Lenses

20+ year track record of success in taking customer concepts from design through mass production.

# Sunex 1NCH™ lenses

## Image Quality

1"-format sensors tend to have slightly larger pixels and seemingly go against the trend of pushing for smaller and smaller pixels. However, this is intentional since the goal of getting "more pixels on the same target area" doesn't necessarily mean that the image quality is also improving.

The larger pixels of 1"-format sensors often have lower noise and better low-light performance and tend to align better with the boundaries of imaging physics and manufacturing tolerances for CMOS lenses.

## Applications

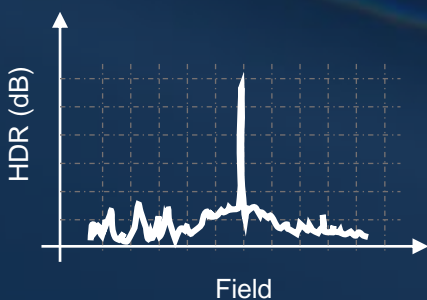
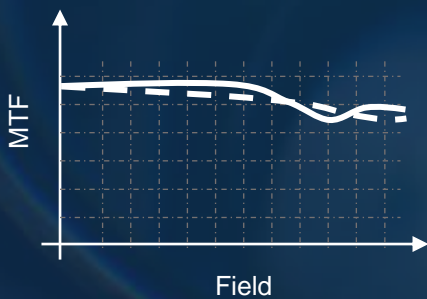
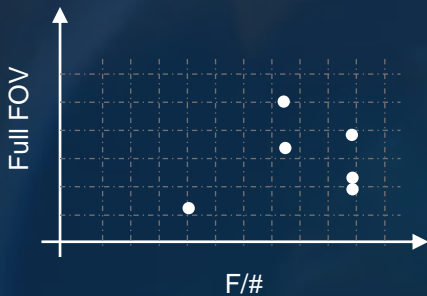
If an application requires high resolution and size is not a primary driver, then the 1" class of sensors are ideal candidates. They offer high resolutions with reasonable pixel pitch and excellent performance. These sensors' size allows lenses that are still well within the commonly-accepted size range of traditional C/CS format be it actually C/CS mount or board-mount.

Such systems are ideally suited to larger drones, OHV applications, Robotics, CV/Machine vision, as well as Enterprise VR/AV and Teleconferencing applications.

## High Dynamic Range (HDR)

HDR (high dynamic range) sensors can capture light intensity variations up to six or more orders of magnitude within the same image frame (~120db). This puts a very demanding requirement on lens performance.

Sunex has developed design expertise, process know-how, and nested cleanroom manufacturing facilities to eliminate or minimize optical noise (such as ghosts, flare, starbursts, spurious images) in lenses for high-performance applications.



All graphs are for illustration purpose only. The individual lens performance can be different.

PN	MP	HFOV	F/#	EFL	TTL	Feature
DSL415	20MP	190@11.2mm	2.4	3.3	50	All- glass, Super Fisheye™, 0% F-Theta.
DSL592	20MP	130@13.3mm	2.8	5.9	43.5	All-glass, 0% F-Theta Distortion
DSL318	10MP	113@13.3mm	2.4	7	55	All-glass, wide-angle FOV, high RI
DSL405	20MP	79@13.3mm	2.8	8.8	39	Hybrid, Short TTL, Tailored Distortion™
DSL428	20MP	80@13.3mm	1.8	9.8	81	All-glass, High RI, Low F/#
DSL427	20MP	42@13.3mm	1.8	18.6	85	All-glass, Narrow FOV, Low F/#

Table only shows a selection. Additional 1NCH™ lens options are available.

## Sensor Module Capabilities

Depending on the need and expertise of our customers, we provide design and manufacturing services for a complete sensor module. We strive to find the best solution for your needs, from designing the schematic, creating the PCB layout, and sourcing all components to building according to your PCB design and parts consignment.

At Sunex, we have the in-house expertise and capabilities for lens and sensor board design, manufacturing, and testing to deliver a fully tested sensor module.

## Active Alignment Capabilities

To achieve the highest system performance when pairing a high-quality lens with a high-resolution sensor, we recommend that our customers consider an active alignment process. Applying a fully automated 6-axis active alignment in mass production increases yield, shortens cycle times, improves system performance, and lowers part-to-part variance.



Exceptional image quality on

1" CMOS sensors

Consulting – Design – Manufacturing - Support



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