NIL TECHNOLOGY

metaEye™ Ultra-compact metalens camera for eye-tracking

JANUARY 29, 2024: TECHNICAL SPECIFICATIONS TO SUPPORT NILT METAEYE™ PRESS RELEASE

NILT metaEye™ Overview

- **Pioneering** metalens architecture only possible with metalens. Delivers performance typically requiring 3 to 4 refractive lenses
- **Ultra-compact** camera module **1.64 x 1.64 x 2.17 mm** (includes PCB, sensor & optics)
- Works with **LED** illumination (+/- 20 nm)
- **Fully integrated metaEye™** lens includes aperture, bandpass filter and spacer
- **metaEye™** camera: **Barrel-free** design enables ultra compact module; Nominal object distance can be set between 15 mm to infinity in the assembly of the module
- **metaEye™** lens is **thermally and mechanically robust**. The lens can withstand surface-mounted-technology temperature profiles
- Metalens architecture used to design the **metaEye™** is **versatile**, can be adopted for a range of customer's applications. It can **deliver popular requirements** like sensor chief ray angle (CRA) matching, work with LED sources, have lower distortion, and higher relative illumination (RI), all while maintaining good MTF over the field of view

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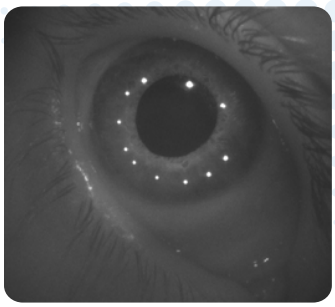
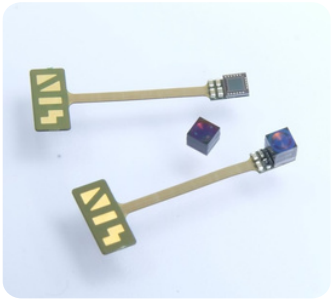
NILT metaEye™ Specifications

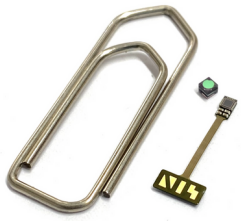
Parameter	Units	NILT metaEye™
Sensor resolution	-	400 x 400 (OVT OG0TB1B)
Pixel size	[um]	2.2
Wavelength design	[nm]	850 +/- 20
FOV diagonal	[°]	90
F/#	-	2.4
TTL (lens to sensor)	[mm]	1.7
Object - nominal	[mm]	15
Focus range	[mm]	10 - 35
Distortion	[%]	-18.1
SMIA	[%]	-8.2
CRA	[°]	28.1° at 1F (matched to sensor)
RI	[%]	62
Module size	mm^3	1.64 x 1.64 x 2.17
Band-pass filter	-	Integrated 850 nm band-pass filter
MTF	-	Supplied upon request

Image capture with metaEye™



Camera module





For inquiries, contact Brian Orr, VP Sales at contact@nilt.com

About NILT

NIL Technology (NILT) excels in creating optical solutions with advanced metalenses, offering custom lens and module design, rapid prototyping, and mass production. NILT's vertical integration ensures swift, collaborative processes for customers' specific needs. NILT also engages with our customers in a foundry model where we prototype and mass-produce the customer's metalens designs. Furthermore, NILT makes custom masters using electron beam lithography, with AR displays being a key focus area. NILT applications areas include 3D sensing, XR, autonomous vehicles and life sciences. With design teams in Europe and production in Malaysia, NILT combines global expertise with efficient manufacturing. Discover more at www.nilt.com.