



**NECTA**   
USB3 line scan SWIR camera

# NECTA series

SWIR

Fmount

Cmount

COGNEX  
COMPATIBLE

HALCON  
COMPATIBLE

NECTA S is the new member of Alkeria USB3 line scan camera family: featuring a short-wave infrared (SWIR) InGaAs sensor, this camera opens the way for a wide new range of possible applications.

NECTA S brings vision capabilities of SWIR sensor into a compact and rugged case, together with the same features of NECTA cameras. It shares the robust platform and the advanced functionalities of NECTA line scan cameras, making it suitable for a variety of applications including fruit, vegetables and grains sorting, packaging inspection, plastic and garbage recycling, solar and silicon wafer inspection, and more.

NECTA S is available with single line InGaAs sensors with horizontal resolution of 512 and 1024 pixels, featuring 40 kHz line rate and providing exceptional responsivity and low noise. Available with C-mount and F-mount lens adapters.

## Even beyond

Alkeria development team is also deeply focused on full-custom camera products. If you need more from your NECTA camera, we can implement smarter hardware and extra firmware features for you. Depending on volumes, we can design your custom camera to protect your IP, differentiate your products and let you gain market share over competitors. If you have been discouraged with custom designs, give us a call: you'll be surprised.

## Features

### InGaAs technology

NECTA S mounts InGaAs SWIR sensors, offering up to 1024 pixels resolution and 40 kHz rate through a 14 bit ADC.

### USB3 interface

Up to 5 Gbps USB3 interface allows easy interface to your PC, eliminating expensive frame-grabbers and bulky cables while keeping highest performances.

### Going farther

NECTA S is compatible with new USB3 Active Optical cables, allowing you to reach longer distances with a single cable.

### Tiny rugged design

Small, ultra-lightweight, rugged aluminum machined high precision case allows maximum installation flexibility even in space constrained environments.

### SWIR application field

Working from 950 to 1700 nm, NECTA S can detect elements that are invisible to human eye. SWIR imaging can be useful to see through opaque materials like plastic or silicon, to reveal water, moisture or different chemical elements, to see through fog, smoke and dust.

### Versatile I/O

With 2 inputs and 2 outputs and 1 bidirectional I/O, NECTA S series offers unprecedented flexibility for interfacing to outer world signals: line/frame triggering, direct encoder readout and strobed lighting have never been so easy.

### Dedicated lens adapter

Our C-mount and F-mount lens adapters are specifically built to fit NECTA S: it gives our customers the perfect flexibility in choosing best optics for their applications.



## Lens adapters

Vision system performances rely on many factors: one of these is lens quality. There are many lenses currently on the market, with different specifications and price levels: every application needs its very own lens.

We know that in Alkeria, so we decided to equip NECTA S with specific C-mount and F-mount lens adapter: they give our customers the perfect flexibility in choosing best optics for their applications.



C-mount



F-mount

## Interfacing

### USB3

Cost-effective, wide-spread, highly performant, plug&play, directly powered by the PC. All of these perks make USB3 the right choice for cameras intended to be ready out-of-the-box.

### I/O

NECTA S provides a versatile I/O interface to control external devices such as strobe lights, encoders, etc. 2 input lines with direct encoder interface, 2 output lines and 1 input/output (RS422, RS644 LVDS, LVTTTL). Its multipurpose I/O connector provides user I/O, line/frame triggering and direct encoder interface.



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## Vision libraries

Image processing libraries represent the most flexible way of developing vision applications: these systems provide a complete range of powerful vision analysis tools, as well as the possibility to develop tailor-made algorithms and functionality to address specific application needs.

That's why our cameras are totally compatible with the major vision libraries, such as MVTech Halcon or COGNEX VisionPro.

### Want to use your own code instead?

Our cameras come with a comprehensive SDK for Windows and Linux featuring a sample player for live view and setting of the camera, and a rich list of code samples in C# and C++ (WIN32 and Qt).

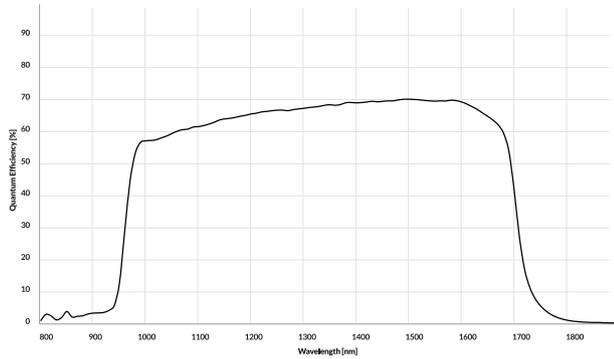
MODEL	NS05K	NS1K
Resolution (wxh)	512 x 1 pixels	1024 x 1 pixels
Pixel size	25 x 25 $\mu\text{m}^2$	12,5 x 12,5 $\mu\text{m}^2$
Spectral range	950 ÷ 1700 nm	
Line rate	Up to 40 kHz	
Shutter control	20.5 $\mu\text{s}$ ÷ 100 ms – Global shutter	
Full Well Capacity	12,5 Me <sup>-</sup>	
Max responsivity	0,128 $\mu\text{V/e}$	
Quantum efficiency	~0,70 @ 1500 nm	
A / D Conversion	14 bit	
Digital out format	8 bit, 16 bit	
Synchronization	External trigger, software trigger, Direct Encoder Interface	
Readout	Normal, AOI, binning	
Power supply	< 3 W – powered by USB3 interface	
Inputs / Outputs	2 in, 2 out and 1 I/O (RS422, RS644 LVDS, LVTTTL), 24V tolerant	
Interface	USB 3.2 Gen 1	
Lens adapter	Built-in baseplate, C-mount, F-mount	
Weight	96 g – without additional lens adapter	
Dimensions	56 mm x 56 mm x 22,3 mm – (L x W x D), camera only	
Conformity	CE, RoHS, FCC/IC	
Main Controls	Shutter, contrast, analog/digital gain, LUT and gamma correction, DSNU/PRNU correction	
Temperature	Operative: 0 ÷ 50 °C   Storage: -20 ÷ 70 °C	

This chart shows all technical specifications of the current NECTA S product line.

To know more about specifications and prices, please contact our Sales department at [sales@alkeria.com](mailto:sales@alkeria.com): they will help you finding the right camera for your application.

## Technical specifications

### Sensors specifications

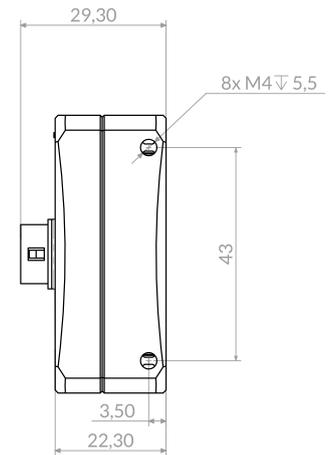
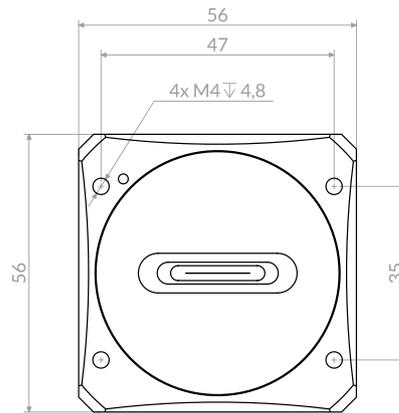
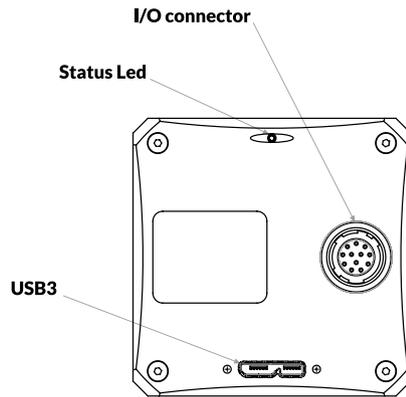


## Applications



Examples of what a SWIR camera can capture: silicon, bruising inspection, fluids level inside opaque bottles.

## Mechanical specifications



All dimensions are expressed in millimeters.  
Camera specifications are subject to change without notice.  
Sensor specifications are taken from the data sheet of the manufacturer.

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