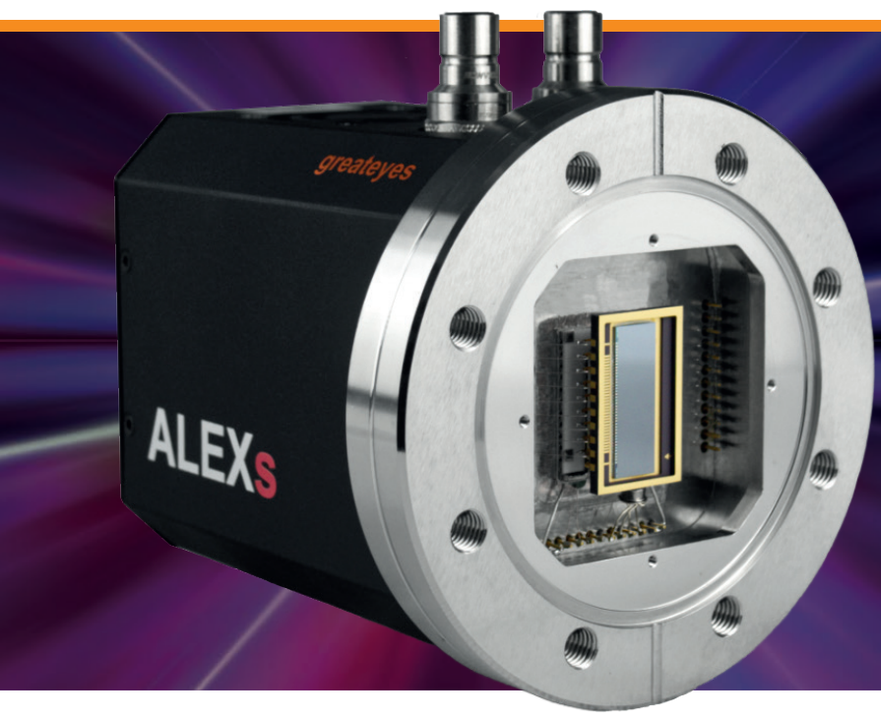
greateyes
EXPAND YOUR VISION

HIGH PERFORMANCE
SPECTROSCOPY CAMERAS



ALEXs

KEY SPECIFICATIONS

- High Quantum Efficiency
- Ultra Deep Cooling to -100°C
- 18-bit Dynamic Range
- Multi-MHz Readout
- Compact Design

Full-Frame Deep Cooling Scientific CCD Camera for Spectroscopy Applications

HIGH RESOLUTION
UP TO
16.8
MEGAPIXEL
HIGH RESOLUTION

VUV
EUV
SXR
HXR

Straight out of Berlin comes **ALEX**, greateyes' new platform for your spectroscopy applications in the VUV, EUV, Soft and Hard X-ray range.

ALEX integrates cutting-edge low-noise electronics and ultra-deep cooling technology while keeping a compact camera design. Multiple readout speeds can be selected supporting pixel rates from 50 kHz up to 5 MHz.

True 18-bit AD conversion allows to exploit the full dynamic range of the CCD sensor for highest performance and SNR. **ALEX** is ideally suited for detection of very weak signal intensities where a low-noise floor is paramount.

ALEX offers unprecedented possibilities for your measurements of tomorrow.

TYPICAL APPLICATIONS

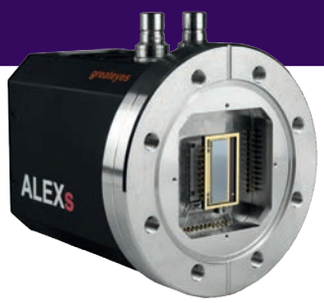
- Soft X-ray Spectroscopy
- Plasma Emission Spectroscopy
- High Harmonic Generation Spectroscopy
- NEXAFS Spectroscopy
- Resonant Inelastic X-ray Scattering

www.greateyes.de

PRECISOMETER
Official representative of Greateyes
info@precisometer.com
precisometer.com/greateyes

ALEXs





Berlin is unique for its character, and so is ALEX

The Berlin TV Tower (the tallest building in Germany) and the ALEX square below it, are well known symbols of Berlin.

FEATURES & BENEFITS

Ultra deep TE cooling down to -100°C
lowest dark current for better detection limit

GigE & USB 3.0 data interface
local or remote network operation – your choice!

Fast readout speeds up to 5 MHz
fast frame rates paired with low-noise electronics

High QE up to 98%
very sensitive sensors for low light applications

User selectable gain
balance your detector for best SNR and dynamic range

Flexible software options
camera software and SDKs available

COMMON SPECIFICATIONS

Pixel readout frequency	50 kHz, 250 kHz, 1 MHz, 3 MHz (5 MHz for visualisation mode)
AD converter resolution	18-bit
Linearity	Better than 99%
CCD epitaxial thickness	15 µm standard, 40µm for deep depletion (DD) models
Flange types	ISO-F DN63, knife-edge sealed CF DN63, CF DN100, CF DN160, CF DN200
Vacuum compatibility	With CF flange: 10^{-10} mbar (UHV capability)
Bakeout temperature	Max. +80°C
Distance flange - focal plane	6 mm for CF DN63, 8 mm for CF DN100 (can be customised)
CCD sensor cooling	-100°C to 20°C, forced air or liquid cooling
Temperature monitoring	Two thermistors at CCD sensor and thermoelectric cooler (hot side)
Data link	Gigabit Ethernet, USB 3.0
Software	greateyes Vision software for Windows 11
SDK and drivers	DLL for Windows; LabVIEW, EPICS, Linux, Python, Tango driver (optional)
TTL interface signals	Sync out, shutter out, 2 external trigger in
Operating conditions	Temperature: 0°C to 35°C ambient, relative humidity <80% (non-condensing)
Power supply	80-264 VAC (115/230 typical), 47-63 Hz (50/60 typical), max. 1.1 A (230 VAC), 1.9 A (115 VAC)
Certification	CE
Dimensions (W x H x L)	Camera body: 8.3 cm x 10.0 cm x 10.9 cm (3.27″ x 3.94″ x 4.29″)
Weight	2.9 kg (with CF DN63 flange)

Included with your camera

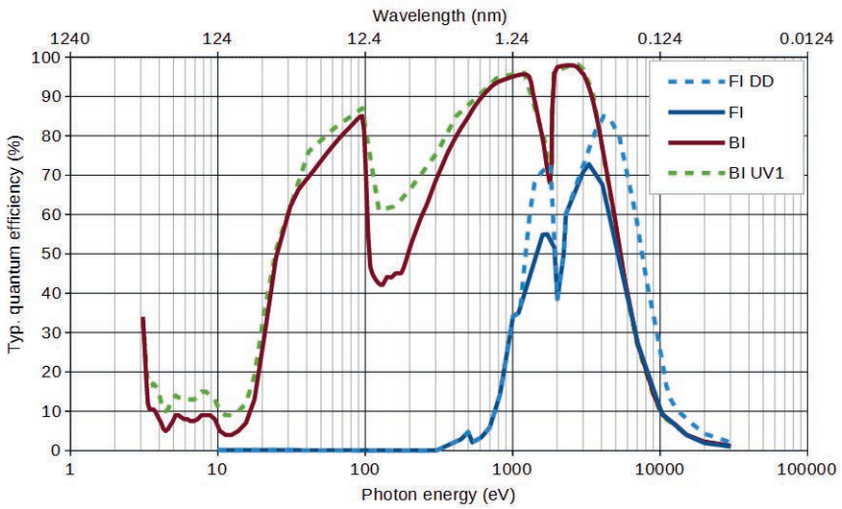
GE-VI01	greateyes Vision software suite for Windows
GE-SDK01	SDK for Windows (C/C++ based)
GE-USB3m3	3 m USB 3.0 cable type A to type C
GE-GigE10m	10 m Ethernet cable
GE-StoB2m	2 m SMB to BNC connection cable x2
GE-POW01	Camera power supply with cabling
GE-ManCam	Camera instruction manual

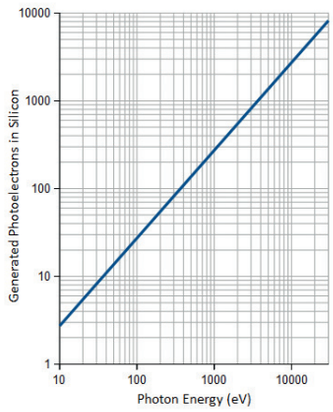
greateyes
EXPAND YOUR VISION

PRECISOMETER
Official representative of Greateyes
info@precisometer.com
precisometer.com/greateyes

ALEXs

HIGH PERFORMANCE
SPECTROSCOPY CAMERAS





The mean energy of a photon to generate an electron-hole pair in silicon is 3.66 eV.

STEP 1: Choose your camera model

ALEXs Series	ALEXs 1k128	ALEXs 1k256		ALEXs 2k512
Sensor code	**FI**	**FI** **FI DD** **BI UV1**		**FI** **BI** **BI UV1**
Usable pixels (columns x rows)	1024 x 127	1024 x 255		2048 x 515
Active image area	26.6 mm x 3.3 mm	26.6 mm x 6.7 mm		27.6 mm x 6.9 mm
Pixel size	26 µm x 26 µm	26 µm x 26 µm		13.5 µm x 13.5 µm
Full well capacity	500 ke$^-$	500 ke$^-$ / 700 ke$^-$ (DD)		100 ke$^-$
Register well capacity	1 000 ke$^-$	1 000 ke$^-$ / 1 400 ke$^-$ (DD)		400 ke$^-$
Typical read noise (e$^-$)		**FI**	**BI**	
@ 50 kHz	4.4	4.2	6.0	3.5
@ 1 MHz	11.0	12.0	13.1	6.8
@ 3 MHz	25.0	25.0	26.0	10.7
Dark Current @ -100°C	0.0004 e$^-$/pixels/s	0.0004 e$^-$/pixels/s 0.005 e$^-$/pixels/s (DD)		0.00025 e$^-$/pixels/s
Gain:				
Standard Mode	0.4 counts/e$^-$	0.4 counts/e$^-$		1 counts/e$^-$
High Capacity Mode	-	-		0.34 counts/e$^-$
CCD sensor type	Front-illuminated (FI), Back-illuminated (BI), Deep depletion (DD), Enhanced back-illuminated (BI UV1)			
Blemish specifications	Grade 0 or Grade 1 (standard) as specified by sensor manufacturer. For more information please see: www.greateyes.de/en/glossar.html			

STEP 2: Select interface vacuum flange

Order Code	Description
CF1	Knife-edge sealed CF DN63 flange with threaded holes
CF2	Knife-edge sealed CF DN100 flange with through holes
CF4	Rotatable, knife-edge sealed CF DN100 flange with through holes
We also provide quick release, rotatable, and other flanges of various sizes - please let us know your requirements	

www.greateyes.de

ALEXs

USB 3.0 Gigabit Ethernet spec EPICS Linux python powered

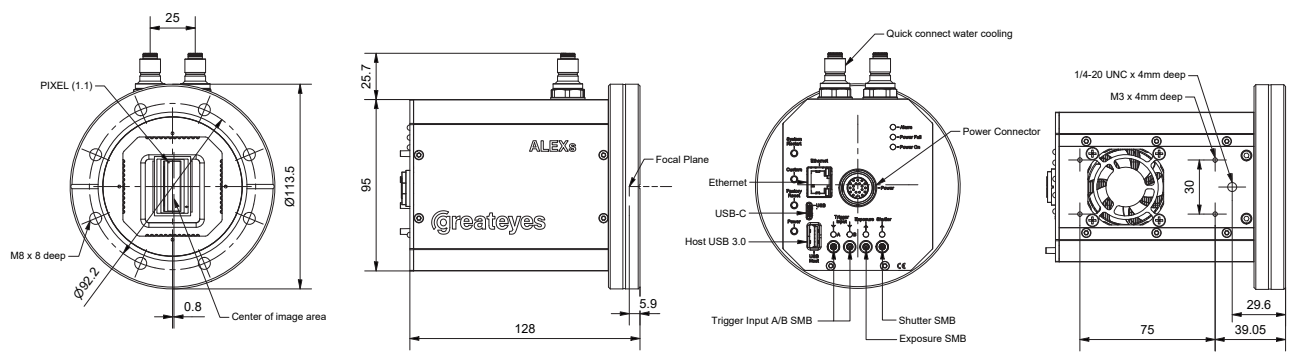
STEP 3: Choose your accessories and software

Order Code	Description
Accessories for Imaging Purposes	
AL-SR45	45 mm shutter, including shutter driver module (compatible with CF DN100 or larger)
GE-AE01	Additional CF DN63 flange with a window of Beryllium, MgF_2, UVFS or other materials, can be sealed with the camera flange, with a port for external vacuum pump, enables ALEX to be used in air independently
Accessories for Enhanced Cooling Performance	
GE-CR01	Compact liquid cooling, circulating the coolant at room temperature for deep camera cooling
GE-CR02	Recirculating water chiller, PID control with temp. from -5°C to 30°C for ultra-deep camera cooling
Software Development Kit (SDK) and Drivers	
GE-LX01	SDK for Linux (C/C++ based)
GE-PYT01	Python driver
GE-LAB01	LabVIEW driver
GE-EP	EPICS driver
GE-TAN	Tango driver

STEP 4: Flexible customisation service

With direct and fast response, we provide various customisations and OEM services. For example, other sensor types, the alteration of sensor position/tilt, the modification of camera housing or cooling system, etc. Let us know what **ALEX** you require.

TECHNICAL DRAWINGS



FRONT VIEW SIDE VIEW REAR VIEW BOTTOM VIEW

greateyes
EXPAND YOUR VISION

greateyes GmbH
Ludwig-Boltzmann-Straße 3
12489 Berlin, Germany

T: +49 (0)30 221 844 700
E: info@greateyes.de

Part of Tibidabo Scientific Industries

Made in Berlin.
Making discoveries worldwide.

Follow us on LinkedIn

Find out more on our website

www.greateyes.de

DS-ALEXs / Rev07 / Sep2026

PRECISOMETER
Official representative of Greateyes
Product selection, configuration & integration support

Office & enquiries
Precisometer B.V.
Eisingastraat 9
2201 DJ Noordwijk, Netherlands

Talk to Precisometer
info@precisometer.com
precisometer.com/greateyes

Explore products & discuss your experiment