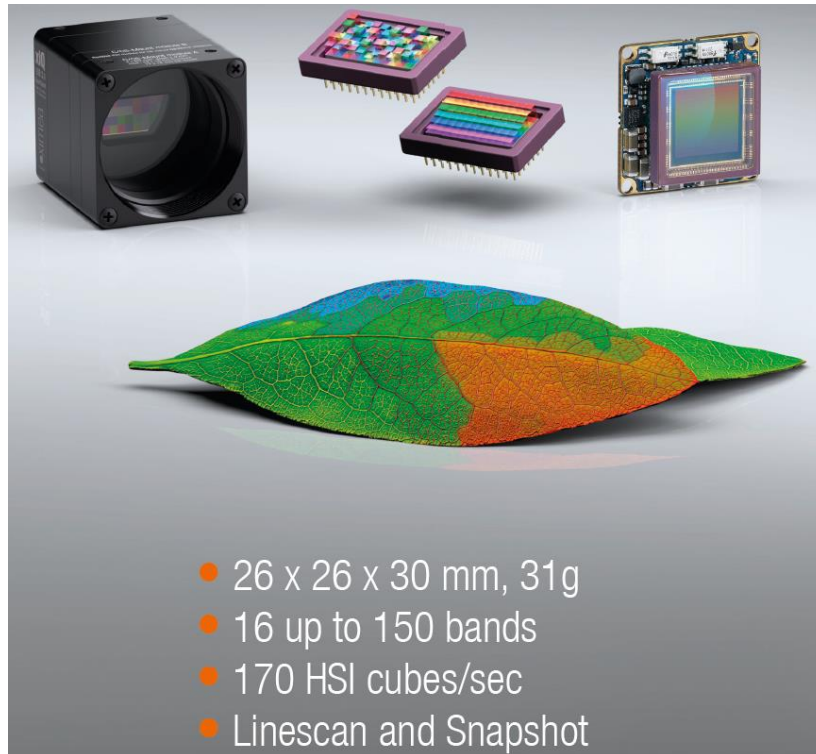


xiSpec

starter kit – content



Scope of delivery

Three xiSpec starter kits are available:

XISPEC-KIT-SM4X4-VIS

XISPEC-KIT-SM5X5-NIR

XISPEC-KIT-LS100-NIR

The scope of delivery is very similar, XISPEC-KIT-SM4X4-VIS and XISPEC-KIT-LS100-NIR are identical.

Components of all starter kits:

VIS/NIR lens 35mm focal length, with filter mount thread

Lite Diffuse Reflectance target

Tripod bracket

Mini tripod

USB3.0 cable 3.0 m

Trigger I/O cable 3m

PELI transport case

USB-stick

Additional components in XISPEC-KIT-SM5X5-NIR:

- Filter mount with cut-off filter assembly 675-nm long pass
- Filter mount with cut-off filter assembly 875 nm short pass

Lens

The lens is an industrial grade NIR corrected C-mount lens from Edmund Optics with a filter mount thread (25.5 x 0.5mm) with manually aperture and focus control.

The standard lens has a focal length of 35mm. Lenses with focal lengths of 16mm and 25mm are available on request.

Components:

Lens EdmundOptics VIS/NIR lens, C-Mount 35mm fixed focal length with M25.5x0.5mm filter thread (#67-716)

<http://www.edmundoptics.com/imaging-lenses/fixed-focal-length-lenses/compact-vis-nir-fixed-focal-length-lenses/67716/>

Lens EdmundOptics VIS/NIR lens, C-Mount 25mm fixed focal length with M25.5x0.5mm filter thread (#67-715)

<http://www.edmundoptics.com/imaging-lenses/fixed-focal-length-lenses/compact-vis-nir-fixed-focal-length-lenses/67715/>

Lens EdmundOptics VIS/NIR lens, C-Mount 16mm fixed focal length with M25.5x0.5mm filter thread (#67-714)

<http://www.edmundoptics.com/imaging-lenses/fixed-focal-length-lenses/compact-vis-nir-fixed-focal-length-lenses/67714/>

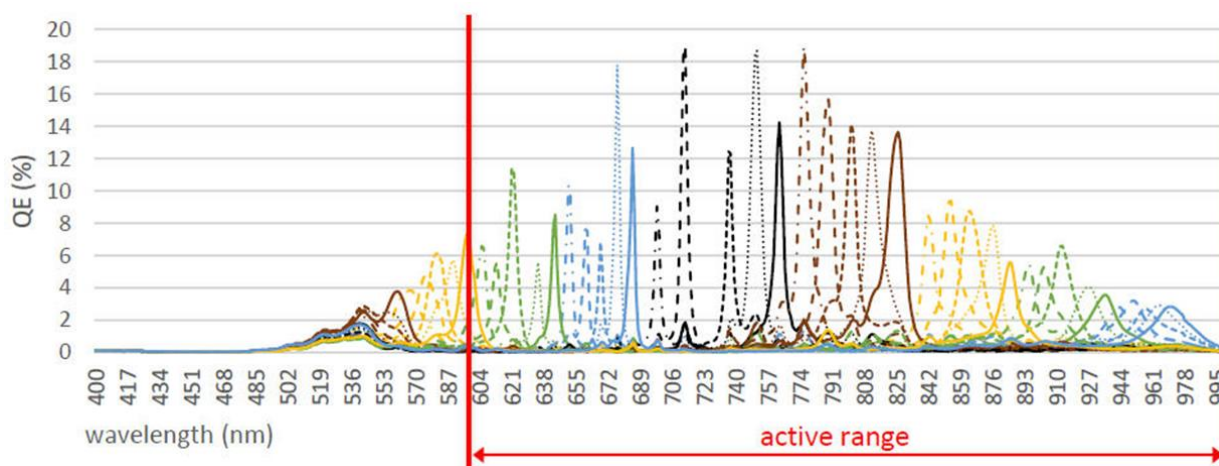
Additional filters (only XISPEC-KIT-SM5X5-NIR)

Several interference filters in case of the SM5X5 camera model do have two peak wavelengths in their responsibility curves (usually below 675nm and above 875nm). A filter is built in as part of the camera to reduce the wavelength range to 600-975nm.

Bands with first order response at 840 – 975 nm have a second order response at 600-675 nm:

Band pass filters to retain second order peaks: 600-875 nm or 675-975 nm

Band pass filter for the full active range: 600-975 nm



Two filters are part of the SM5X5 starter kit:

- 675nm long pass (only wavelengths above 675nm will pass)
- 875nm short pass (only wavelengths below 875nm will pass).

It is recommended to use one of filters to avoid this double peaks:

- 675nm long pass + built in filter -> wavelength range 675 - 975 nm
- 875nm short pass + built in filter -> wavelength range 600 - 875 nm

Components:

Edmund Optics Filter Mount M25.5 x 0.5mm for 25mm diameter filters (#65-800)

<http://www.edmundoptics.com/optics/optical-filters/optical-filter-accessories/m25-5-m30-5-mounts-for-25mm-diameter-filters/65800/>

675nm long pass filter (#84-747):

<http://www.edmundoptics.com/optics/optical-filters/longpass-edge-filters/high-performance-od-4-longpass-filters/84747/>

875 nm short pass filter (#86-106)

<http://www.edmundoptics.com/optics/optical-filters/shortpass-edge-filters/high-performance-od-4-shortpass-filters/86106/>

Lite Diffuse Reflectance target

Another effect has to be corrected to get usable results. I call it vignetting effect (pages 19-21).

Depending on the (general) lighting situation and the lens and aperture there is a difference in the brightness level between the center and the corners of the pictures. An additional effect may be a difference in the spectral signatures between the center and the corners of the pictures (caused e.g. by crosstalks).

It is recommended to do a fixed pattern / grey-level correction (band specific).

The Lite Diffuse Reflectance target can be used to get a white image to calculate the correction values.

Component:

Lite Diffuse Reflectance target, Zenith Lite Target SG-3151-U

<http://sphereoptics.de/en/wp-content/uploads/sites/3/2014/03/SphereOptics-Ultralight-Targets-Zenith-Lite.pdf>

Standard camera accessories:

Several accessories to run the camera are part of the delivery:

Tripod bracket	part MQ-BRACKET-T	(xiQ manual chapter 3.12)
USB3.0 cable 3.0 m	part CBL-U3-3M0	(xiQ manual chapter 3.9)
Trigger I/O cable 3m	part CBL-MQSYNC-3M0	(xiQ manual chapter 3.11)
Mini tripod		

The XIMEA xiQ camera series which is the platform for the xiSpec cameras. The xiQ-Manual is also available at:
http://www.ximea.com/downloads/usb3/manuals/xiq_technical_manual.pdf

The camera model MQ022MG-CM fits best.

USB-Stick

The content of the USB-stick is described in the document xiSpec-USB-Stick-delivery-Vxx.pdf

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