

The Institute for Emerging Electronic Materials (IET) at IFW Dresden focuses on research into the characterization of photonic band structures, topological edge modes, and other exotic states in topological photonic systems. This includes the manipulation of the Berry phase, selective excitation of topological edge states, chiral edge modes involving gain media, and mode localization related to Moré superlattices. To investigate the photonic band structure, we are planning to construct a momentum-space measurement system utilizing supercontinuum light lasers to characterize the bandstructure and diffraction pattern in reciprocal space of samples. Given the momentum-space imaging spectroscopy technique, an imaging spectrometer and 2D CCD is essential for this setup. All specified criteria must be met in full.

### Specifications:

Imaging spectrometer equipped with 2D CCD

- Spectral coverage from 390-2400 nm at any repetition rate
- Spectrometer with one entrance and one exit. Both entrance and exit are not on same side of the spectrometer.
- Turret with no more than three gratings to allow higher angle rotations for the gratings.
- A minimum of three such turrets could be programmed in the software without a need of recalibration on each exchange. Can be bought later.
- Spectrometer is capable of simultaneous hyperspectral imaging.
- A Kinematic slit with Manual micrometer from 10  $\mu\text{m}$  to 3 mm, width continuously adjustable. Slit can be moved out of the optical path for 12mm clear aperture without need of micrometer.
- 300 l/mm and 1200 l/mm gratings optimized for visible range with a blaze angle optimized for 500 nm wavelength not smaller than 68 mm x 68 mm size.
- Dark current no more than 0.0004 e-/p/s at -70 °C.
- Dark noise no more than 0.0002 e-/p/s.
- Full well capacity no less than 100 ke-.
- Read noise no more than 3 e-.
- Equipped with 25 mm integral shutter.
- Resolution no less than 1024 x 1024 pixels.
- Pixel Size not larger or smaller than 13  $\mu\text{m}$ .
- Equipped with Spec-Mount for mounting on the spectrometer.
- Exposure ranges from 0 hour to more than 1 hour.
- Available acquisition modes are Full Frame and Kinetics.
- Analog to digital converter has digitization bit depth of 16 bit.
- Field of view is no less than 13.3 x 13.3 mm.
- The dimensions of the camera [W x H x L] should be no less than 118 x 114 x 165 mm.
- Programmable vertical shift speed from < 3.2 usec/row to 18 usec/row
- Available software selectable gains are 1, 2, 4 e-/ADU (typical) and available at all speeds.
- The quantum efficiency of the sensor is more than 50% at 400nm, more than 90% at 500 nm, maximum 96% at 550 nm, more than 90% at 700 nm, more than 85% at 750 nm, more than 40% at 900 nm and allows detection over 1000 nm.
- Warranty: 12 months after delivery.

**Regulations of the assignment procedure/Contact person:**

Mrs. Kristin Schwencke via eVergabe

**Terms of delivery:**

Only brand-new, original products of the manufacturer are to be supplied, which are approved in the EU and comply with local safety standards. The deliverability of the offered equipment must be fully secured from the beginning of the contract. Delivery must be feasible by the end of 02/2025.

Delivery place:

IFW Dresden e. V.  
Helmholtzstr. 20  
01069 Dresden  
Germany

**Delivery date: Until February 2025**

Specification: .....actual delivery date.

Disposal:

Environmentally-friendly packaging and recyclable goods are assumed. The free return of packaging and old equipment from internal production for environmentally friendly disposal by a specialist company must be carried out by the supplier within three working days after information by the customer. The contractor shall provide evidence of environmentally-friendly disposal in accordance with the statutory requirements as requested by the client.

**Prices and terms of payment:**

Advance payments (payment before acceptance) are only possible if they are customary in the industry. For this purpose, the following shall apply as payment modality:

- o max. 30% of the order value after receipt of the order confirmation and invoicing (in accordance with Section 56 Federal Budget Code and Section 56 Saxon Financial Code in connection with Section 17 (1)(2) VOL/B) – 14 days with deduction of cash discount or within 30 days net without deduction
- o final payment of the order value after successful acceptance and after presentation of a verifiable invoice in accordance with the agreed term of payment

o advance payments shall only be made after presentation of a valid bank guarantee issued to IFW Dresden for an unlimited period free of charge and recognised by IFW Dresden as such, which is provided by a credit institution authorised in the European Union and accepted by IFW Dresden

The prices used are fixed prices and refer to the designs offered for the respective items, including delivery and packaging free place of performance and any customs duties.

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(Place, date )

Name, stamp, legally binding signature)