



# FIGSPEC FS2X Series Imaging Hyperspectral Cameras



FigSpec® series of imaging hyperspectral cameras adopt transmission grating splitter module with high diffraction efficiency and high sensitivity surface array camera, combined with built-in scanning imaging and auxiliary camera technology, which solves the difficult problems of traditional hyperspectral cameras, such as external push scan imaging mechanism and complex focus. It can be directly integrated with standard C interface imaging lens or microscope to achieve rapid spectral image acquisition.

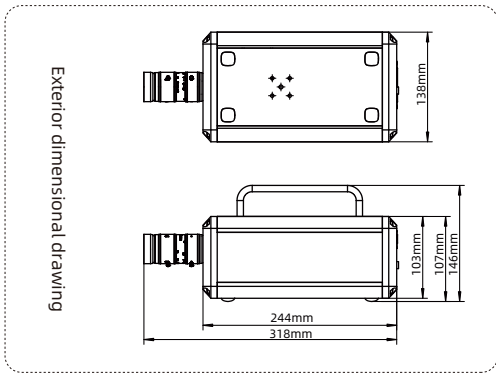
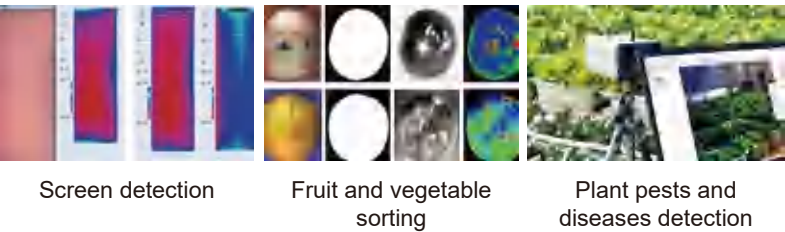
### Visible spectrum/NIR:

- Spectral range: 400-1000nm, wavelength resolution better than 2.5nm, up to 1200 spectral channels.
- Image resolution up to 1920\*1920

### SW-NIR:

- Spectral range: 900-1700nm, wavelength resolution better than 6nm, up to 512 spectral channels
- Image resolution up to 640\*640

## Application fields



## Parameters

| Model                       | FS-20                                                 | FS-22                                                 | FS-23                                                 | FS-24                                                 | FS-25                                                 |
|-----------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| Spectroscopic method        | Grating                                               | Grating                                               | Grating                                               | Grating                                               | Grating                                               |
| Image resolution            | 480*480                                               | 1920*1920                                             | 1920*1920                                             | 1280*1280                                             | 640*640                                               |
| Dynamic range               | 12 bits                                               | 12 bits                                               | 12 bits                                               | 12 bits                                               | 14 bits                                               |
| Imaging speed               | ≤15 seconds                                           | ≤15 seconds                                           | ≤5 seconds                                            | 100fps                                                | ≤5 seconds                                            |
| Spectral channels number    | 150                                                   | 1200                                                  | 1200                                                  | 680                                                   | 512                                                   |
| Spectral region             | 400-700nm                                             | 400-1000nm                                            | 400-1000nm                                            | 400-1700nm                                            | 900-1700nm                                            |
| Spectral FWHM               | 2.5nm                                                 | 5nm                                                   | 2.5nm                                                 | 13nm                                                  | 6nm                                                   |
| Slit width                  | 25um                                                  | 25um                                                  | 25um                                                  | 25um                                                  | 25um                                                  |
| Transmission efficiency     | 60%                                                   | 60%                                                   | 60%                                                   | 60%                                                   | 60%                                                   |
| Stray light level           | 0.5%                                                  | 0.5%                                                  | 0.5%                                                  | 0.5%                                                  | 0.5%                                                  |
| Pixel size                  | 5.86um*5.86um                                         | 5.86um*5.86um                                         | 5.86um*5.86um                                         | 5um*5um                                               | 15um*15um                                             |
| Detector type               | CMOS                                                  | CMOS                                                  | CMOS                                                  | InGaAs                                                | InGaAs                                                |
| Sensor imaging surface size | 11.3*7.1mm                                            | 11.3*7.1mm                                            | 11.3*7.1mm                                            | /                                                     | 9.6mm x 7.68mm                                        |
| Standard lens focal length  | 25mm                                                  | 25mm                                                  | 25mm                                                  | 16mm                                                  | 25mm                                                  |
| Minimum working distance    | 100mm-∞                                               | 150mm-∞                                               | 100mm-∞                                               | 100mm-∞                                               | 100mm-∞                                               |
| Field angle                 | 25°                                                   | 25°                                                   | 25°                                                   | 22.6°                                                 | 17°                                                   |
| Minimum exposure time       | 34us                                                  | 21us                                                  | 21us                                                  | /                                                     | 50us                                                  |
| Maximum exposure time       | 10 seconds                                            | 10 seconds                                            | 10 seconds                                            | /                                                     | 1 seconds                                             |
| SNR                         | 600/1                                                 | 600/1                                                 | 600/1                                                 | 600/1                                                 | 600/1                                                 |
| Data interface              | USB3.0                                                | USB3.0                                                | USB3.0                                                | USB3.0                                                | USB3.0                                                |
| Camera lens interface       | C-Mount                                               | C-Mount                                               | C-Mount                                               | C-Mount                                               | C-Mount                                               |
| Accessories                 | USB3.0                                                | USB3.0                                                | USB3.0                                                | Lens, USB3.0 data cable, power adapter                | USB3.0                                                |
| Imaging features            | With ROI function<br>Single area ROI can be achieved  | With ROI function<br>Single area ROI can be achieved  | With ROI function<br>Multi area ROI can be achieved   | ROI function, can realize multiple area ROI           | With ROI function<br>Single area ROI can be achieved  |
| Auxiliary imaging features  | Auxiliary framing camera to monitor the shooting area | Auxiliary framing camera to monitor the shooting area | Auxiliary framing camera to monitor the shooting area | Auxiliary framing camera to monitor the shooting area | Auxiliary framing camera to monitor the shooting area |
| Power supply mode           | Built-in battery                                      | Built-in battery                                      | Built-in battery                                      | Built-in battery                                      | Built-in battery                                      |
| Host engine size *          | 25.5cm*13.8cm*10.7cm                                  | 25.5cm*13.8cm*10.7cm                                  | 25.5cm*13.8cm*10.7cm                                  | /                                                     | 33.5cm*18.2cm*14.3cm                                  |
| Weight**                    | Less than 2.8KG                                       | Less than 2.8KG                                       | Less than 2.8KG                                       | /                                                     | Less than 5.3KG                                       |
| Power dissipation           | 50W                                                   | 50W                                                   | 50W                                                   | /                                                     | 50W                                                   |

\* size without lens and handle \*\* weight without lens

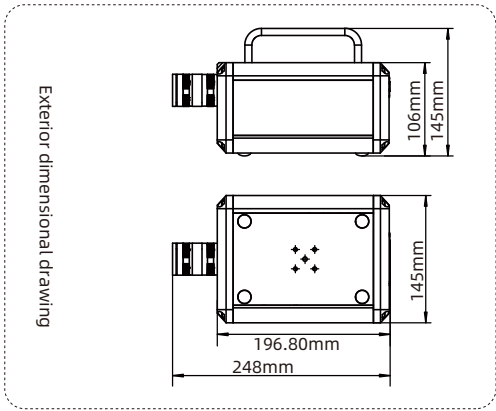
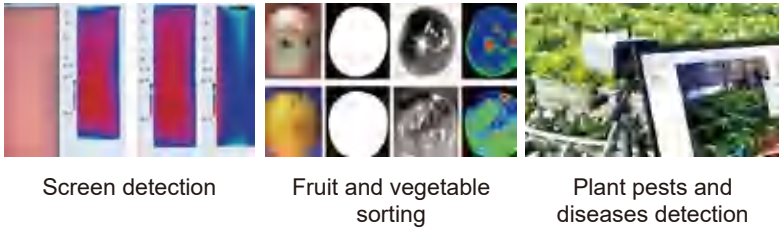
Imaging hyperspectral camera FS-27



FS-27 imaging hyperspectral camera adopts transmission grating spectral module with high diffraction efficiency and high sensitivity surface array camera, combined with built-in scanning imaging and auxiliary camera technology, to solve the traditional hyperspectral camera needs external push-scan imaging mechanism and difficult to operate such as complex focusing. It can be directly integrated with the standard C interface imaging lens or microscope to achieve fast acquisition of spectral images.

- Spectral method: transmission grating
  - Spectral range: 900-1700nm
  - Spectral channel: 1024
  - Spectral resolution: Better than 6.5nm
- Image resolution: 1280\*1280
  - Imaging speed: 10 seconds
  - Slit width: 25unm
  - Camera interface: C-Mount

Application fields



Parameters

|                                   |                                                                      |
|-----------------------------------|----------------------------------------------------------------------|
| Model number                      | FS-27                                                                |
| Spectroscopic method              | Transmission grating                                                 |
| Image resolution                  | 1280 * 1280                                                          |
| Dynamic range                     | 12 bits                                                              |
| Imaging speed                     | 10s                                                                  |
| Spectral channel                  | 1024                                                                 |
| Spectral range                    | 900-1700nm                                                           |
| Spectral resolution (FWHM)        | 6nm                                                                  |
| Slit width                        | 25um                                                                 |
| Transmission efficiency           | > 60%                                                                |
| Stray light level                 | < 0.5%                                                               |
| Pixel size                        | 5um*5um                                                              |
| Detector type                     | InGaAs                                                               |
| Sensor imaging surface dimensions | 9.6mm x 7.68mm                                                       |
| Standard lens focal length        | 25mm                                                                 |
| Minimum working distance          | 150mm                                                                |
| Field Angle                       | 14.5 °                                                               |
| Minimum exposure time             | 1us                                                                  |
| Maximum exposure time             | Ten seconds                                                          |
| Signal-to-noise ratio             | 600/1                                                                |
| Data interface                    | start                                                                |
| Camera interface                  | C-Mount                                                              |
| attachment                        | USB3.0 transmission line                                             |
| Imaging function                  | Have ROI capability<br>Multiple regional ROIs can be achieved        |
| Auxiliary imaging function        | Auxiliary view camera to realize the monitoring of the shooting area |
| Power supply mode                 | Built-in battery power                                               |
| dimension                         | Length x width x height :24.8cm*14.5cm*14.5cm                        |
| weight                            | 2535g                                                                |
| Power dissipation                 | 50W                                                                  |