

FD-1665 Multispectral Camera Systems



High-resolution Sensing at Rapid Frame Rates

FD-1665 multispectral cameras are available in configurations with resolution from VGA levels to 2MP, at frame rates up to 71 frames per second. Users can select from preconfigured 3-, 5- and 7-channel RGB-NIR cameras or configure a 3CCD camera with custom-specified filters for bands between 400-1100 nm. FD-1665 enables a range of applications including medical diagnostics, machine vision in process control, and safety and security.

The FD-1665 has Gigabit Ethernet output for independent control of exposure, gain and readout. Each sensor can be triggered automatically for simultaneous exposure or controlled separately via hardware or software. By mixing color and monochrome CCDs, 3-9 spectral bands can be captured simultaneously.



At a Glance

- Image device:** CCD sensors (multiple options; see separate table)
- Pixel depth:** 12-bit ADC
- Sensors:** Color (Bayer) and monochrome
- Spectral sensitivity:** 400-1100 nm
- Configurations:** Multispectral, polarization and high dynamic range (HDR)
- Frame rate:** Up to 71 fps
- Digital interface:** 3x GigE (CAT 5)
- Lens mount:** Nikon F-mount
- Lens focal length (fixed):** 14 mm to 1500 mm
- Image data format:** Y8, Y16 (all models); RGB; YUV411, YUV422, YUV444; 8-bit and 16-bit raw Bayer data (color models)
- Video data output:** 8-, 16- or 24-bit digital data
- Electronic shutter:** Automatic/manual/one-push modes, programmable via software
- General purpose I/O port:** 12-pin Hirose GPIO
- Operating temperature:** 0-40 °C
- Power consumption:** 10 w

FD-1665 Sensor Options

| FD-1665 Sensors | Resolution | Sensor Size (Type) | Frame Rate |
|-----------------|-------------|--------------------|------------|
| Sony ICX424 | 659 x 494 | 1/3 | 71 |
| Sony ICX445 | 1296 x 966 | 1/3 | 32 |
| Sony ICX285 | 1392 x 1040 | 2/3 | 17 |
| Sony ICX274 | 1628 x 1236 | 1/1.8 | 14 |

FD-1665 in Action

FD-1665 multispectral cameras are robust yet flexible, with no moving parts. Each camera has three sensor planes arranged around a common aperture, so you get simultaneous, sub-pixel aligned video without parallax or magnification differences. Here are some example applications:

- imaging of lymph systems to test the efficacy of treatments for rheumatoid arthritis
- tracking and analysis of human eyes for applications from surgical procedures to surveillance system design
- detection of precancerous lesions
- imaging of lava surface temperature for volcano monitoring

