# Near IR
# PA1280 F70 xxx  Series



### Sony IMX990 – Advanced SenSWIR™ Imaging Technology

**Broad-Spectrum Imaging from Visible Light to SWIR (400–1700 nm)**

The Sony IMX990 is a high-performance Short-Wavelength Infrared (SWIR) image sensor featuring Sony's innovative SenSWIR™ technology.

Its key advantage is the ability to capture images across a broad spectral range, from visible light (400 nm) to short-wavelength infrared (1700 nm), using a single image sensor.

This unique capability makes it an ideal solution for semiconductor wafer inspection, moisture visualization, chemical and foreign material detection, and precision spectral imaging applications.

**Innovative Integration of InGaAs & Silicon Technologies**

Sony's advanced Cu-Cu (Copper-to-Copper) hybrid bonding technology enables the integration of an InGaAs photodiode array with silicon readout circuitry, achieving an exceptionally fine pixel pitch.

This innovative sensor architecture delivers high-resolution SWIR imaging, enabling precise detection of microscopic defects and fine structural details compared with conventional larger-pixel SWIR sensors.

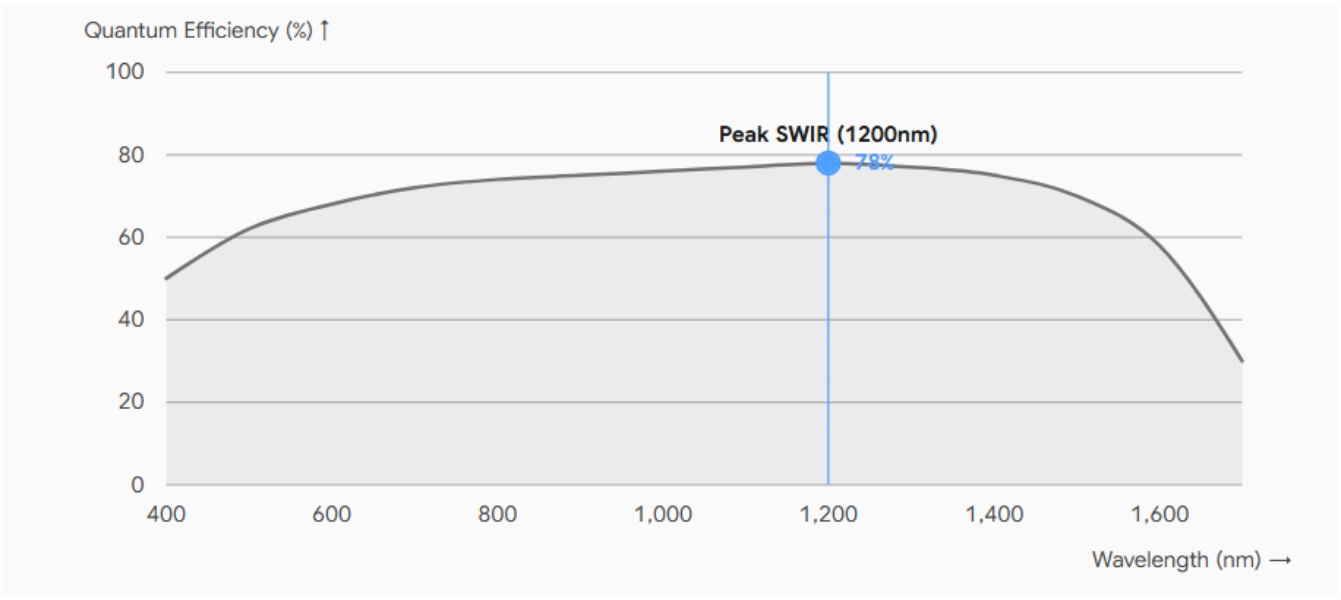
## APPLICATIONS

• **Semiconductor & Display Inspection**
Enables inspection of internal defects in silicon wafers, semiconductor packaging alignment, and precision inspection of electronic components.

• **Food & Pharmaceutical Packaging Inspection**
Supports fruit bruise detection, liquid-level and fill-volume inspection in pharmaceutical containers, and identification of foreign contaminants in packaged products.

• **Agriculture & Precision Chemical Inspection**
Enables crop moisture assessment and high-speed material sorting of plastics, including PP, PE, and PET, when combined with appropriate spectral imaging techniques.

• **Solar Cell Inspection**
Supports Electroluminescence (EL) and Photoluminescence (PL) imaging for detecting defects, microcracks, and performance-related irregularities in photovoltaic cells and modules.




## SPECIFICATION

| | PA1280 F70 NCL | PA1280 F70 NCLd | PA1280 F70 NGE |
|---|---|---|---|
| SWIR Sensor Information | | | |
| Sensor | SONY IMX990 | | |
| Maker | Area InGaAs **Non-TEC** | | |
| Spectral Response | 0.4 ~ 1.7㎛ | | |
| Pixel Pitch | 5㎛ | | |
| Focal Plane Array | 1280 x 1024 | | |
| Interfaces | | | |
| Mode | Camera Link Base | | GigE Vision |
| Pixel Clock / Protocol | 74.25Mhz | | GigE Vision |
| Image Data | 12 / 10 / 8-bit Mone | | |
| Frame Rate | 71fps | | 50fps |
| Functionality | | | |
| Image Acquisition Mode | Free running / External Trigger using +5V TTL or CC1 (for CL only) or Software(for CXP only) | | |
| Image Correction | PRNU / Vignetting / Bas Pixel | TPC / FFC (logical TEC) / Bad Pixel | |
| Electrical Interface | | | |
| Input Voltage | DC12V or PoCL | DC12V | DC12V or PoE |
| Power Consumption | <4W | <6W | <7W |
| Environmental Conditions | | | |
| Operation Temperature | -10°C ~ 40°C | | |
| Operation Relative Humidity | maximum 90% non-condensing | | |
| Storge Temperature | -40°C ~ 85°C | | |
| Storage Relative Humidity | maximum 90% non-condensing | | |
| Mechanical Interface | | | |
| Size (W x H x D) | 51 x 51 x 61.04mm | | 51 x 51 x 71.15mm |
| Weight | 220g (without Lens) | | 250g (without Lens) |
| Lens mount | M42 or C-mount | | |
| Power connector | 6-pin threaded Hirose Mating connector part# HR10A-7R-6PB(73) | | |

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