



**INTRODUCING** P20-S1 LOW-LIGHT CAMERA CORE  
**SMALL. SMART. POWERFUL.**

DESIGNED FOR DEMANDING  
APPLICATIONS

- **Driver Vision Systems:** Low-latency output in all weather & lighting conditions.
- **Weapon Sights:** High sensitivity ensures precision in the field.
- **Surveillance Cameras:** Compact form factor and multiple output types for easy integration.
- **UAV / Drone Cameras:** Lightweight and low power, ideal for airborne missions.
- **Remote Weapon Stations:** Rugged build with wide operating temperature.
- **Hand-Held Applications:** Fast boot, vibration tolerant, and compact overall design.



KEY FEATURES

- **Low-Light Performance:** Sony Starvis1
- **Resolution:** 2.1 MP Sensor
- **Zoom:** Up to 10× (stepless digital zoom)
- **Multiple Outputs:** Analog (PAL/NTSC), HD-SDI(1080p 60fps)
- **Input Voltage:** 5V DC
- **Temperature Resilient:** Operates in extreme environments.
- **Built-In Image Processing:** AGC, WDR, AWB, BL compensation, Noise Reduction

**"PRECISION VISION PERFECTLY ENGINEERED"**

## P20-S1 Camera Core - Technical Specifications

Model	P20-S1-SDI
<b>Sensor Specifications</b>	
Array Type	SONY Starvis 1
Detector	2.1MP EXMOR R CMOS
Detector Size	1/2.8"
Resolution	1920(H) × 1080(V)
Image Size	Diagonal 6.46 mm, (Type 1/2.8) approx.
Shutter Type	Rolling
Scanning Type	Progressive
<b>Power Requirements</b>	
Power Supply	5V DC
Power Consumption	< 2.5 W
Power Protection	Over Voltage, Over Current
<b>Imaging Performance</b>	
Frame Rate	Up to 60Hz
Minimum Illuminance	0.01 LUX @ (F1.2 AGC ON)
IR-Cut	Switchable IR-Cut Filter
IR-Cut Function	External Sensor Reading
Time-to-image	< 2 sec
SNR	> 52Db
Digital/Wide Dynamic Range	Yes
AGC	Yes
Frame Accumulation	Yes
Electronic Shutter	Auto/Manual (1/30 Default, Long Exposure ~1sec)
Backlight Compensation	Yes
Mirroring	Hor. / Ver. Flipping
<b>Interfaces</b>	
Communication	UART, Similar to VISCA
Digital Video Output	HD-SDI(1080p 60fps)
Analog Video Output	CVBS (NTCS/PAL) 700 TVL
<b>Physical and Environmental Characteristics</b>	
Working Temperature	-20°C / +55°C
Storage Temperature	-30°C / +75°C
Humidity	85% RH
Vibration	MIL-STD-810
Dimensions (mm)	47x34x28 (Depends on the optics)



# LOW-LIGHT MODULES



## INTRODUCING P4K-29 LOW-LIGHT CAMERA CORE SMALL. SMART. POWERFUL.

### DESIGNED FOR DEMANDING APPLICATIONS

- **Driver Vision Systems:** Low-latency output in all weather & lighting conditions.
- **Weapon Sights:** High sensitivity ensures precision in the field.
- **Surveillance Cameras:** Compact form factor and multiple output types for easy integration.
- **UAV / Drone Cameras:** Lightweight and low power, ideal for airborne missions.
- **Remote Weapon Stations:** Rugged build with wide operating temperature: -40°C to +71°C.
- **Hand-Held Applications:** Fast boot, vibration tolerant, and compact overall design.



### KEY FEATURES

- **Low-Light Performance:** Sony Starvis2
- **Resolution:** 4K Sensor
- **Zoom:** Up to 4× (stepless digital zoom)
- **Latency-Free Imaging:** 60 Hz, <1s boot.
- **Multiple Outputs:** Analog (PAL/NTSC), 3G-SDI(1080p 60fps)
- **Flexible Input Voltage:** 6V-13V DC
- **Temperature Resilient:** Operates in extreme environments.
- **Built-In Image Processing:** AGC, WDR, AWB, Backlight compensation, Noise Reduction

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## P4K-29 Camera Core - Technical Specifications

Model	P4K-29-SDI
<b>Sensor Specifications</b>	
Array Type	SONY Starvis 2
Detector	IMX585AAQJ
Detector Pitch	2.9 $\mu\text{m}$
Resolution	3840(H) $\times$ 2160 (V)
Image Size	Diagonal 12.84 mm, (Type 1/1.2) approx.
Shutter Type	Rolling
Scanning Type	Progressive
<b>Power Requirements</b>	
Power Supply	6V to 12V DC
Power Consumption *	< 2.5 W
Power Protection	Over Voltage, Over Current
<b>Imaging Performance</b>	
Frame Rate	Up to 60Hz
Minimum Illuminance	Color: 0.0001 LUX @ (F1.0 AGC ON) B/W: 0.0001 LUX @ (F1.0 AGC ON)
IR-Cut	Switchable IR-Cut Filter
IR-Cut Function	Auto / Color / B/W / External
Time-to-image	< 1 sec
SNR	> 50Db(AGC off)
Digital/Wide Dynamic Range	Off/Low/Middle/High; WDR SNR: 120Db
AGC	0-10 Steps
Frame Accumulation	Off/X2/X4/X8/X16/X32
Electronic Shutter	Auto/Manual (1/60 to 1/30,000 sec)
Defog	Off / On
Backlight Compensation	Off / On
Mirroring	Hor. / Ver. Flipping
<b>Interfaces</b>	
Communication	UART, Similar to VISCA
Digital Video Output	3G-SDI(1080p 60fps)
Analog Video Output	CVBS (960H) 1Vp-p
<b>Physical and Environmental Characteristics</b>	
Working Temperature	-30°C / +71°C
Storage Temperature	-30°C / +75°C
Humidity	85% RH
Vibration	MIL-STD-810
PCB Dimensions (mm)	42x42