

# 高速像增强型 CMOS 相机

## - PhoScu-ICMOS 系列



### 产品概述:

高速像增强型 CMOS 相机是具有微光探测能力和纳秒级快门曝光的超高速成像相机。PhoScu-ICMOS 将超二代像增强器通过光耦合方式连接到 CMOS 图像传感器上，兼具高增益放大、高分辨率、高灵敏、高动态范围等特点。

PhoScu-ICMOS 内部集成高精度计时器，可精准控制像增强器快门开启时间，最窄门控宽度 5ns，同时输出两路延时脉宽可调节的同步 TTL 信号（OUTA 和 OUTB）可用于驱动脉冲激光或 LED。

PhoScu-ICMOS 支持定制，可根据您的需求配备不同型号的像增强器和 CMOS 传感器，包括响应光谱范围、光阴极材料、像素分辨率、增益、图像传输接口等。

### 产品特点:

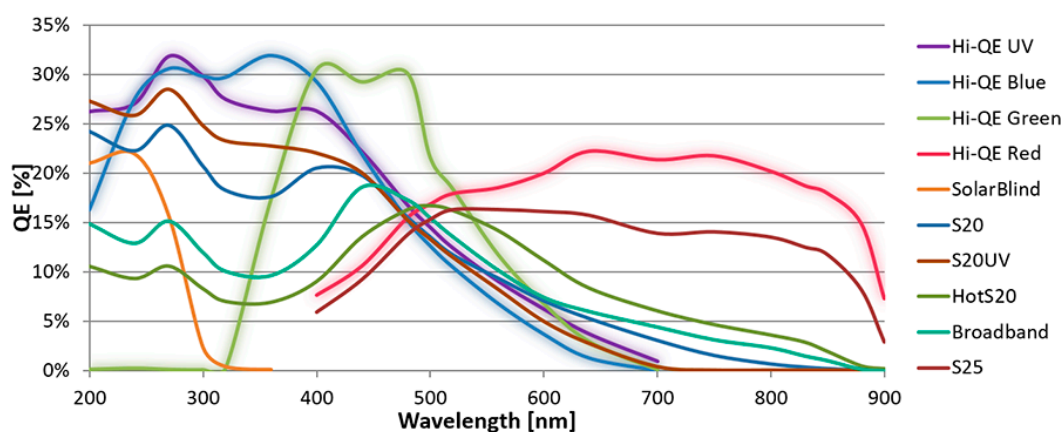
- ▶ 最高帧频 164fps
- ▶ 最小门宽 5ns
- ▶ 最大门控频率 300k
- ▶ 高分辨超二代像增强器
- ▶ 内部高精度计时器
- ▶ 便携紧凑型设计

### 基本产品参数:

Image sensor	1920 x 1200 pixels
Unit cell size	5.86 $\mu$ m
Dynamic range	72dB
Max. frame rate at full resolution	164fps
Readout noise	6.8e <sup>-</sup>
Computer interface	USB3.0
Selectable Region of Interest	1920 x 1200 @ 128 fps (12 bit) or 164 fps (10 bit)
Digitization	10 or 12 bit
Trigger in	TTL
Gate in	TTL
Min gate width	5ns
Min gate width increments	500ps
Max. repetition frequency	300k

Lens mount	F-mount (standard)
Intensifier models	1MCP, 2MCP
Input diameter	18 mm
Sensitivity and spectral range (nm)	175-950
Photocathode	S20, S25, GaAs
Sensor coupling	Tapered fiber optics
Photon gain (max)	30000 (1MCP), 100000 (2MCP)
Equivalent Background Input( $\mu\text{lx}$ )	0.25 (typical)
Spatial resolution of intensifier	50 ~ 60lp/mm (1MCP)
Output A/B pulse width control	√
Output A/B delay control	√
Phosphor	P43 (standard)

### 光谱响应效率:



Photocathode	S20	S25	GaAs
Full spectral range(nm)	175-800	175-950	350-900
Peak Wavelength (nm)	400	460	450-550
Luminous sensitivity( $\mu\text{A}/\text{lm}$ )	175 (typical)	700 (typical)	800 (typical)
Peak quantum efficiency (%)	20 (typical)	17 (typical)	50 (typical)
Resolution (lp/mm)	60lp/mm (1MCP)	60lp/mm (1MCP)	60lp/mm (1MCP)
EBI ( $\mu\text{lx}$ )	0.25 (typical)	0.25 (typical)	0.3 (typical)
Input window	Quartz	Quartz	Borosilicate glass
Effective area on input	18 mm	18 mm	18 mm
Phosphor Peak Wavelength (nm)	548	548	548
MCP configurations	1MCP, 2MCP	1MCP, 2MCP	1MCP, 2MCP

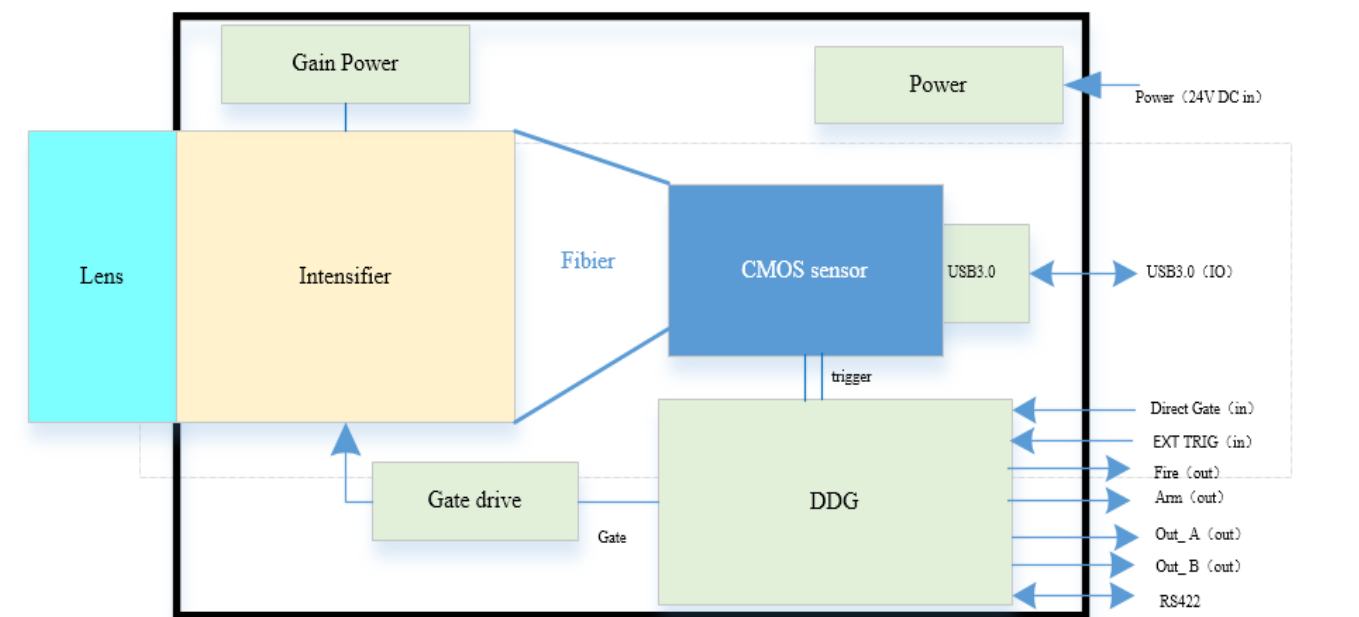
### 内部控制:

Delay control	√
Delay control range	20ns-1s
Gate control	√
Gating pulse width range	5ns-1s
min pulse width increments	0.625ns
Pulse repetition rate	300kHz (max)
Gain Control	√
Shutter control	√

### 工作条件:

Supply voltage	24V
Power	20W
Operating temperature	5 °C – 40 °C
Operating humidity (non-condensing)	20% – 80%
Weight	< 4kg
Location to be used	Indoor only

### 硬件接口:



接口名称	作用说明	输入/输出	信号要求
EXT TRIG	相机曝光外部触发接口	In	5V TTL 信号, 阻抗 50Ω
FIRE	相机曝光同步输出信号	Out	5V TTL 信号, 阻抗 50Ω
DIRECT GATE	像增强器直接开门输入接口	In	5V TTL 信号, 阻抗 50Ω
OUT_A	Ddg Gate 同步信号 1	Out	5V TTL 信号, 阻抗 50Ω
OUT_B	Ddg Gate 同步信号 2	Out	5V TTL 信号, 阻抗 50Ω
ARM	备用接口		
TSET	备用接口		

### 尺寸接口:

