ICU

INTEGRATED CAMERA UNIT

General specifications:

- Analog/digital camera
- Ultra low light level sensitivity < 1 µlux
- Auto / manual gain and exposure time
- Extended standard and optional digital features
- Easy to connect C-mount adaptor and connector board
- Low weight < 100 g
- Compact Ø43x45 mm
- Low power typical < 0.8 W

Application Areas:

- Medical Diagnostics
- Microscopy
- Biophysics
- Endoscopy
- Quality control
- Non-Destructive Testing
- Robotics and Vision
- Factory Automation
- Surveillance
- Range gating

PHOTONIS

INDUSTRY & SCIENCE

PHOTONIS

ICU - Integrated Camera Unit

The ICU is a new generation, low light level, fully automatic gated intensified CMOS camera. The detector combines exclusive, proprietary digital technology with powerful signal processing algorithms to optimize the real-time and dynamic imaging performance. This together with its small package size and low power consumption makes the ICU a powerful new tool for low light level imaging.

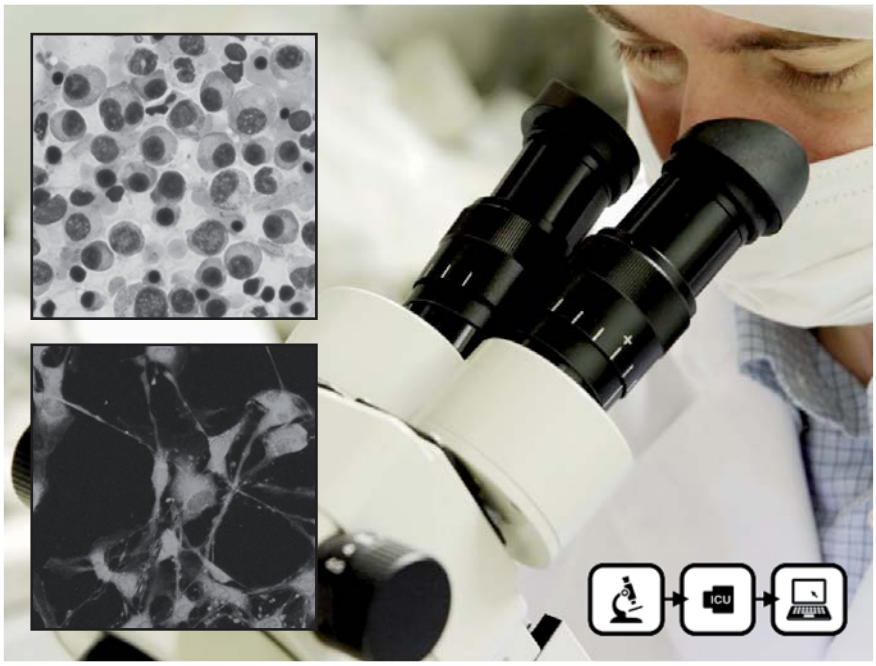
The ICU provides exceptional video performance over a unique dynamic range of eleven orders of magnitude and combines proprietary built-in protection of the image intensifier tube unlike any other intensified camera in the world.

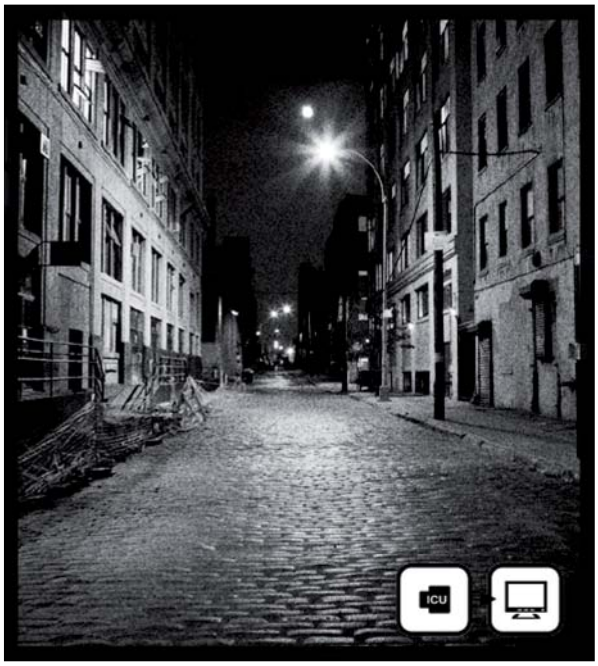
The fully integrated camera automatically determines the best settings for gain and exposure time based on the raw video signal. Naturally manual settings are also possible. Its digital zoom features enables the user to analyse details whilst maintaining high resolution.

Next to the standard spectral range of 400 – 900 nm a wide choice of photo cathodes ranging from 116 to 900 nm is available. For range gating applications the external synchronization option is offered. Flexibility in the Photonis design allows us to offer more customized solutions like phosphor screens, symbol insertion, genlock etc.

The optional C-mount adaptor and connector board makes the ICU an easily connectable analytical tool. The ICU can be controlled over an USB interface using the ICU development software kit. The USB interface will also be used to power the ICU.

A suite of image enhancement features, including anti-blooming, noise reduction, image sharpening, dynamic contrast enhancement and real-time image defect photometric correction, provide unique capabilities to maximize the camera performance in all environmental conditions.





ICU - Integrated Camera Unit

ICU - Specifications

Video specifications	ICU Compact	ICU High Resolution
Sensor active area	8.6 x 6.4 mm	13.8 x 10.4 mm
Sensor active area zoom	4.3 x 3.2 mm	6.9 x 5.2 mm
Imager	2/3" CMOS sensor	
Pixel & read-out mode	1.280 x 1.024 - interlaced	
Analog output	PAL (625 lines) or NTSC (525 lines) - composite video 75Ω imp	
Video format	ITU-R BT.656-4	
Digital output	SDI - LVDS 270 Mbit/s	
Coding depth	8 bits	
Camera communications link	RS 232 - 115.2 kbaud / USB	
Camera main characteristics	**ICU Compact**	**ICU High Resolution**
TV resolution	640 TV lines at 10% contrast	640 TV lines at 20% contrast
Size (Ø x L) without lens	Ø43 x 45 mm	Ø43 x 55 mm
Weight	< 100 g	< 155 g
Spectral range (S25)	400 - 900 nm	
Interscene dynamic range	1 µlx to 100,000 lx	
Intrascene dynamic range	> 35 dB	
Max gain	15 mV/µlx (analog) - 1.6 LSB/µlx (digital)	
Min sensitivity	1 µlx face plate illumination	
Power consumption	Nominal 5V (4V - 6V) / 160 mA	
Shock	75 g - 6 ms	
Operating temperature	-20°C to +50°C	
Storage temperature	-35°C to +65°C	
Exposure time	30 ns - 2 sec	
Image Intensifier Gain	10,000 typical	

Image Intensifier options		
Photocathode	Input window	Spectral range (nm)
S25 (standard)	Glass	400 - 900
	Fiber optic	400 - 900
S20	Quartz	180 - 600
	Fiber optic	380 - 600
Hot S20	Quartz	480 - 560
UV Solar Blind	Quartz	180 - 260
Phosphor screen	Decay time (ms)	
P22 (standard)	10	
P43	1	
P24	0.1	
Hardware options		
C-mount adaptor incl tripod connection		
Connector board consisting of:		
• Analog video out	BNC Connector	
• Digital video out	BNC Connector	
• Communication & power	Mini USB Connector	

Standard features
Auto exposure / Auto gain
Automatic digital image correction
Anti-blooming correction
Optional features
Image sharpening
Dynamic Contrast Enhancement (DCE)
Digital zoom (2x) with full resolution
Symbol insertion (real time text, graphics)
Enhanced signal to noise at low light levels (down to 0.1µlx)
Snapshot mode (640 x 480)
Digital control package for external synchronization for laser gated imaging
Extended intrascene dynamic range (85 dB)
C-mount adaptor / special connectors

PHOTONIS

INDUSTRY & SCIENCE

For more information, please visit www.photonis.com

PHOTONIS USA Inc.
1000 New Holland Avenue
Lancaster, PA 17601-5688
United States of America

T +1 800 366 2875 (US & Can)
T +1 717 295 6888 (US & Can)
T +1 717 295 2704 (International calls)
F +1 717 295 6096

Email: sales@usa.photonis.com

PHOTONIS Netherlands
Dwazziewegen 2
9301 ZR RODEN
P.O. Box 60
9300 AB RODEN
The Netherlands

T +31 (0)505 01 88 08
F +31 (0)505 01 14 56

Email: sales@nl.photonis.com

ICU/IS/JUN09