
PLIEGO DE PRESCRIPCIONES TÉCNICAS

SUMINISTRO E INSTALACIÓN DE “ULTRAFAST SINGLE PHOTON IMAGING CAMERA” PARA EL LABORATORIO DE ICFO, MEDIANTE PROCEDIMIENTO ABIERTO NO SUJETO A REGULACIÓN ARMONIZADA

NÚMERO D'EXPEDIENT: 2024.SU.019
--

Contents

CLÁUSULA 1. Objeto del contrato	1
CLÁUSULA 2. Needs to be satisfied with the contracting	1
CLÁUSULA 3. Technical specifications. Requirements	1
CLÁUSULA 4. Shipping, transport	2
CLÁUSULA 5. Warranty	2
CLÁUSULA 6. CE Marking	2
CLÁUSULA 7. Target price	2
CLÁUSULA 8. Delivery time	2

CLÁUSULA 1. Objeto del contrato

El presente contrato tiene como objetivo el Suministro e instalación de “ULTRAFast SINGLE PHOTON IMAGING CAMERA” para el laboratorio de ICFO.

La tipología de los artículos objeto de suministro se hallan vinculados con el CPV (Vocabulario Común de Contratación Pública), **38000000-5 Equipo de laboratorio, óptico y de precisión (excepto gafas)**.

CLÁUSULA 2. Needs to be satisfied with the contracting

The NMSB lab at ICFO promises to provide insight into the developmental mechanism of neuronal systems and the emergence of mechanosensitivity. To perform longitudinal, non-invasive imaging protocols in combination with mechanical stimulation, the lab built high resolution microscope for samples with a low photo budget. Previous light detector proved insufficient to satisfy the highly demanding imaging conditions such as:

- 1) low noise to image single photons
- 2) fast acquisition over the full frame of the camera (4400x2400) to capture the mobility of living organisms
- 3) small pixel size to increase resolution and satisfy Nyquist sampling

CLÁUSULA 3. Technical specifications. Requirements

Effective number of pixels	4432 (H)×2368 (V)
Pixel size	4.6 μm×4.6 μm
Effective area	20.387 mm×10.892 mm
Full well capacity	20 000 electrons (Typ.)
Readout speed^{*1}	Full resolution, CoaXPress : 115 frames/s Full resolution, USB 3.1 : 15.7 frames/s Vertical 4 line, CoaXPress : 19 500 frames/s Vertical 4 line, USB 3.1 : 3690 frames/s
Readout noise	1.0 electrons (rms), 0.9 electrons (median)
Quantum efficiency	86 % (peak QE) (Typ.)
Exposure time	7.309 μs to 10 s (7.309 μs step)
Cooling method	Peltier cooling
Cooling temperature	Forced-air cooled (Ambient temperature: +25 °C) + 20 °C
Dark current	0.6 electrons/pixel/s (Typ.)
Dynamic range^{*2}	20 000 : 1 (rms) , 22 000 : 1 (median)
Sensor mode	Area readout , Lightsheet readout
External trigger function	Area readout mode : Edge trigger , Global reset edge trigger , Level trigger , Global reset level trigger , Sync readout trigger , Start trigger Lightsheet readout mode : Edge trigger , Start trigger
External trigger signal	External input (SMA)
External trigger level	TTL/3.3 V LVCMOS level
External trigger delay function	0 μs to 10 s (1 μs step)
External output signal	Global exposure timing output , Any-row exposure timing output , Trigger ready output, Programmable timing output High output , Low output
External output level	3.3 V LVCMOS level
Interface	CoaXPress (Quad CXP-6) / USB 3.1 Gen 1
A/D converter	16 bit , 8 bit
Lens mount	C-mount

CLÁUSULA 4. Shipping, transport

Shipping and transport to the laboratories of Prof. Dr. Michael Krieg at ICFO must be included.

CLÁUSULA 5. Warranty

Minimum two-year (2) full warranty on all components, starting at system acceptance. The warranty will include the replacement of any faulty or damaged part(s) during the normal use of the system. It will cover any cost related with the disassembly, transportation, reparation and re-assembly of the damaged component(s).

CLÁUSULA 6. CE Marking

CLÁUSULA 7. Target price

- 21.370,00€ (Vat Excluded).

CLÁUSULA 8. Delivery time

8.1. Delivery time maximum of one week:

- Delivery time is defined as the time elapsed since the signature of the contract until the system delivery at ICFO facilities. It includes the manufacture of the system, the acceptance test at company's premises and the transportation.

Castelldefels, a fecha de su firma digital

Dr. Michael Krieg
NMSB Professor
ICFO