Centro Astronómico Hispano-Alemán A.I.E.

PLIEGO DE PRESCRIPCIONES TÉCNICAS QUE HABRÁN DE REGIR PARA LA CONTRATACIÓN DEL SUMINISTRO DE UN DETECTOR INFRARROJO PARA EL INSTRUMENTO "PANIC" DEL CENTRO ASTRONÓMICO HISPANO-ALEMÁN AIE, EXPEDIENTE LIC-2018-006

1. Objeto

El objeto del presente pliego es describir el equipo necesario para la renovación del detector infrarrojo del instrumento PANIC del Observatorio de Calar Alto. Este proyecto ha sido co-financiado con fondos FEDER, Ref. CAHA15-CE-3902.

2. Especificaciones Técnicas

a. Hardware

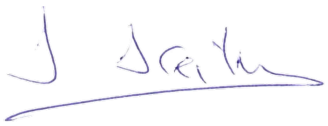
Item #		Specification	Goal	Comment
1	Format	4096 x 4096		
2	Pixel size	15.0 x 15.0 µm		
3	Cut-off wavelength	λc ranges from 2.41 µm to 2.52 µm		λc is wavelength at which QE is 50% of the peak QE within the band
4	Number of outputs	32 outputs		Teledyne test system is limited to 32 outputs only
5	Mode	Slow mode only		Typical pixel rate at 100KHz
6	Well capacity	>50 ke-	> 80 ke-	At 250 mV bias
7	Readout Noise	Double correlated < 30 e- rms	Double correlated < 18 e- rms	

8	Median Quantum Efficiency	>50% measured at selected wavelengths	≥ 80% at astronomical JHK wavebands	Measured at 800nm, 1230nm, 2000nm
9	Median dark current	<0.1 e-/pixel /second	≤ 0.01 e-/pixel/sec	At 77K and 250 mV bias
10	Crosstalk	<3%	<2%	Nearest neighbor
11	Surface flatness	<25 µm	<20 µm	Peak to valley, measured at room temperature
12	Operability	>93%	>97%	A pixel is considered operable if QE>35% and dark current <0.5 e-/pixel/second and single CDS read noise < 35 e-rms
13	Clusters of >50 contiguous inoperable pixels	Sum of clusters <3% of total pixels	Sum of clusters <1% of total pixels	A bad row, or a bad column, or a channel crack is considered a cluster

An operation of 64 output channels is desirable, even if not tested by Teledyne.

Calar Alto a 11 de julio de 2018

EL DIRECTOR



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