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Camera Test Report

Tested by: Ken Rodenburg **Date** 5/23/11

Final Approval_____**Date**_____

System Information

Camera Type	1100S
Camera Serial Number	1100-170
Service Cabinet Serial Number	s/n 144
CCD Type	E2V 42-40, NIMO, BI, Astronomy process
CCD Serial Number	10112-11-07
Digitization Precision	16 Bit
Number of Ports	2
Window Type	ML BBAR coated fused silica
Shutter Type	Vincent associates CS65 cased s/n 3302
Computer Interface Type	gigabit FO
FO Interface Cable Length	20m
Power Supply Type	Rackmount switching supply SI 5341 s/n 164
Power Supply Cable Length	75’
Cooler Type	PT-30 cryotiger
Coolant Hose Length	75’
DSP Code Name	7139-.bin
SET File Name	1100-170.set
CONFIGURATION File Name	7139-.cfg

Dark Current

Item	Specification	Measured Result
Maximum Dark Current	0.0003e^-/p/sec	**0.00012** e^-/p/s@ -110 ^oC
CCD Operating Temperature	-100°C to -110°C	**-110.0** ^oC

Readout Modes

Readout Mode	Readout Speed	Readout Time, 2 port, Seconds	Binning	Analog Attenuation
00	752kHz	3.0	1x1	0
01	400kHz	5.5	1x1	3
02	400kHz	1.7	2x2	3
03	200kHz	10.8	1x1	3
04	200kHz	3.0	2x2	3
05	100kHz	21.3	1x1	3

Port A Performance

Parameter	Read Rate	Readout Mode	Specification	Measured Result
Gain and noise			Gain e-/adu Noise(e-)	Gain (e-/adu) Noise (e-)
	752kHz	00		6.42 12.41
	400kHz	01		3.68 6.47
	400kHz	02		3.53 6.23
	200kHz	03		1.35 3.53
	200kHz	04		1.29 3.43
	100kHz	05	4.0	0.58 2.54
Serial CTE	752kHz	1ke$^-$	>0.999993	0.99996840
Serial CTE	752kHz	100ke$^-$	>0.999993	0.99999778
Parallel CTE	752kHz	1ke$^-$	>0.999999	0.99999927
Parallel CTE	752kHz	100ke$^-$	>0.999999	0.99999995
Full well	752kHz	RM00	>80ke$^-$	164.2ke$^-$
Linearity	752kHz	RM00	1% +100e$^-$ ≈600e$^-$ to 130ke$^-$	pass -- see graph

Port B Performance

Parameter	Read Rate	Readout Mode	Specification	Measured Result
Gain and noise			Gain e-/adu Noise(e-)	Gain (e-/adu) Noise (e-)
	752kHz	00		6.44 12.58
	400kHz	01		3.70 6.60
	400kHz	02		3.56 6.27
	200kHz	03		1.35 3.66
	200kHz	04		1.29 3.53
	100kHz	05	4.0	0.59 2.69
Serial CTE	752kHz	1ke$^-$	>0.999993	0.99997375
Serial CTE	752kHz	100ke$^-$	>0.999993	0.99999773
Parallel CTE	752kHz	1ke$^-$	>0.999999	0.99999940
Parallel CTE	752kHz	100ke$^-$	>0.999999	0.99999995
Full well	752kHz	RM00	>80ke$^-$	166.0ke$^-$
Linearity	752kHz	RM00	1% +100e$^-$ ≈600e$^-$ to 130ke$^-$	pass -- see graph

Cosmetic Defects

Column	Row	Defect Type
1179	210	port B trap
		0 hot pixel
		see listing for hot and dark pixel
		26 dark pixel

Notes: 1x1 binned readout used for all characterization unless otherwise noted.

Hot and Dark defects = one port read-out, defect coordinate location based on serial and parallel origin = 0.

Traps = cte <0.99999, 2 port readout, coordinate location based on serial origin =0, serial length = 1094.

Dark pixel = A pixel having a responsivity of ≤90% of the local mean at 80ke$^-$.

Hot pixel = A pixel with greater than 2.0e$^-$/p/s charge generation rate at -110°C.

Six readout modes are preconfigured, but any combination of readout speed, attention, and binnings may be used. Offsets may need to be changed for non-preconfigured readout modes.

Camera Voltage/Calibration Setup

reference 1100-170.vlt

Supply Voltages @ Camera Head

Signal	Voltage
+5V	4.99
+28V	28.11
+24V	23.69 regulating, window heater off
+13V	13.11
-13V	-12.97
+9V	9.03
-9V	-9.01

Housekeeping parameters

cfcal gain/offset	704/237
cbcal gain/offset	704/224
cfgaini	200
gaini	200
pidmod	4095
vacuum offset	0