

<b>ELECTRO-OPTICAL AND MECHANICAL RESULTS SHEET</b> <b>CCD231-42, BI, 2k x 2k, NIMO, FOUR OUTPUT</b>	<b>DAS770896AS</b> <b>Version 2 Sheet 1 of 2</b>
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Associated Documents: CCD231-42 BI NIMO Data Sheet, Provisional V4, Mar 2013

<b>Device Serial Number</b>	<b>12234-10-01</b>	<b>Tester (Initials &amp; No.)</b>	<b>MS 6151</b>	<b>Date</b>	<b>21/03/2013</b>
<b>Device Type</b>	<b>CCD231-42-x- F61</b>	<b>Grade</b>	<b>0</b>		

x=grade

All test performed on output OS-E, at 500 kHz and in mode-1 unless stated otherwise

TEST	RESULT	LIMITS	PASS / FAIL	UNITS	
Amplifier Responsivity	OS-E (1)	7.43	5.00 min	PASS	$\mu\text{V}/e^-$
	OS-F (2)	7.42	5.00 min	PASS	$\mu\text{V}/e^-$
	OS-G (3)	7.40	5.00 min	PASS	$\mu\text{V}/e^-$
	OS-H (4)	7.45	5.00 min	PASS	$\mu\text{V}/e^-$
Readout Noise (measured at 50 kHz)	OS-E (1)	3.1	4.0 max	PASS	rms $e^-$
	OS-F (2)	3.0	4.0 max	PASS	rms $e^-$
	OS-G (3)	3.1	4.0 max	PASS	rms $e^-$
	OS-H (4)	3.1	4.0 max	PASS	rms $e^-$
Charge Capacity (where non-linearity =3.0%)	OS-E (1)	344	200 min	PASS	ke
	OS-F (2)	348	200 min	PASS	ke
	OS-G (3)	362	200 min	PASS	ke
	OS-H (4)	375	200 min	PASS	ke
Serial CTE	OS-E (1)	0.999999	0.999990 min, 1.000000 max	PASS	n/a
	OS-F (2)	0.999998	0.999990 min, 1.000000 max	PASS	n/a
	OS-G (3)	0.999998	0.999990 min, 1.000000 max	PASS	n/a
	OS-H (4)	1.000000	0.999990 min, 1.000000 max	PASS	n/a
Parallel CTE	0.999996	0.999990 min, 1.000000 max	PASS	n/a	
Deferred Charge (Parallel)	0	-	FIO	$e^-$	
Deferred Charge (Serial)	-3	-	FIO	$e^-$	
Mean Dark Signal at test temperature (Measured)	393	-	FIO	$e^-/\text{pix}/\text{hr}$	
Equivalent Mean Dark Signal at - 100°C (calculated)	6.2	-	FIO	$e^-/\text{pix}/\text{hr}$	
Mean Dark Signal at -120°C (calculated)	0.03	2.0 max	PASS	$e^-/\text{pix}/\text{hr}$	

Key: FIO = for information only

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Waterhouse Lane, Chelmsford, Essex CM1 2QU United Kingdom  
 Telephone: +44 (0) 1245 493493 Facsimile: +44 (0) 1245 492492  
 Internet: www.e2v.com

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<b>Device Serial Number</b>	12234-10-01
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TEST		RESULT	LIMITS			PASS / FAIL	UNITS	
		QE limits depend on device type						
Quantum Efficiency	350 nm	50.9	30.0 min			PASS	%	
	400 nm	98.2	75.0 min			PASS	%	
	500 nm	94.7	75.0 min			PASS	%	
	650 nm	95.6	80.0 min			PASS	%	
	900 nm	61.3	50.0 min			PASS	%	
PRNU (1σ)	400 nm	2.0	3.0 max			PASS	%	
	650 nm	1.3	3.0 max			PASS	%	
	900 nm	1.3	5.0 max			PASS	%	
<b>Cosmetic Grading:</b>			Grade 0	Grade 1	Grade 2	GRADE		
Defects in Darkness	Point Defects (a)	0	100 max	150 max	300 max	0	n/a	
	Bright Columns (b)	0	FIO	FIO	FIO	FIO	n/a	
PR Defects	Dark Points (c)	4	FIO	FIO	FIO	FIO	n/a	
	Dark Columns (d)	0	FIO	FIO	FIO	FIO	n/a	
	Bright Columns (e)	0	FIO	FIO	FIO	FIO	n/a	
Traps (>200e)		0	5 max	10 max	20 max	0	n/a	
Total Spots (a)+(c)		4	100 max	300 max	500 max	0	n/a	
Total Columns (b)+(d)+(e)		0	0 max	2 max	10 max	0	n/a	
<b>Mechanical Measurements:</b>								
Chip Flatness Peak to Valley at room temperature		5	20 max			PASS	μm	

Key:                    n/a = not applicable                    FIO = for information only

**CUSTOM TESTS (If applicable)**

TEST	RESULT	LIMITS			PASS / FAIL	UNITS

**OPERATING CONDITIONS (for non-charge dumping conditions)**

VOLTAGE	VALUE	MIN - MAX	UNITS	VOLTAGE	VALUE	MIN - MAX	UNITS
OD, DOD*	27.8	25 - 31	V	SS	0	0 - 10	V
RD	17	16 - 19	V	RØH, SWH	10	9 - 12	V
OG	2.5	1 - 5	V	ØRH	12	9 - 14	V
DGL	0	-2 - 0.5	V	IØH, TGØH	10	9 - 12	V
DD	29	25 - 31	V				

\* OD/DOD value is set voltage in e2v test camera. Actual applied voltage is 0.3V lower at device level

**ELECTRO-OPTICAL TEST TEMPERATURES**

MEASUREMENT	TYPICAL VALUE	ACTUAL VALUE	UNITS
Dark Signal / Defects in darkness	-80	-80.0	°C
All other E-O Tests	-100	-100.0	°C

**NOTES**