

# National Semiconductor

Hi-Rel Operations Radiation Engineering/RHA Programs  
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## Enhanced Low Dose Rate Sensitivity (ELDRS) Characterization Report

LM158AJRLQMLV – 5962R8771003VPA  
LM158AHRLQMLV – 5962R8771003VGA  
LM158AWGRLQMLV – 5962R8771003VZA



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Rev. B

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## LM158A Enhanced Low Dose Rate Sensitivity (ELDRS) Characterization Report

### 1.0 Summary

National Semiconductor has released a new version of the LM158A (LM158AxRLQMLV). This product has a new device type number (03) on the Defense Supply Center Columbus (DSCC) Standard Microcircuit Drawing (SMD) to distinguish it as a part that does not exhibit Enhanced Low Dose Rate Sensitivity (ELDRS). The DSCC SMD number is 5936R8771003VxA. It is qualified for low dose rate environments to 100 krad(Si), but is not qualified for high dose rate applications. The high and low dose rate radiation test data are presented.

### 2.0 Test method, characterization matrix and sample size

The product tested is National's new LM158AxRLQMLV, DSCC SMD device type 03 and SMD number 5962R8771003VxA. Units were assembled in the 8 lead ceramic dual inline package (LM158AJRLQMLV, 5962R8771003VPA) and went through burn-in according to the V level process flow of MIL-STD-38535.

This characterization was performed using MIL-STD-883G, test method 1019.7, section 3.13.1.1 as a guide. The test procedure was modified to increase the sample size to 6 different wafers, with 5 units per wafer, for a total of 30 units per test leg, with one exception. One lot had 6 units for the high dose rate, biased leg, so that leg had a total of 31 units.

Low dose rate, units unbiased during radiation (LDR\_UNBIAS)  
Low dose rate, units biased during radiation (LDR\_BIASED)  
High dose rate, units unbiased during radiation (HDR\_UNBIAS)  
High dose rate, units biased during radiation (HDR\_BIASED)

For the bias test legs, the supply pins were held at  $\pm 15$  V, the outputs were tied to the inverting inputs and the noninverting inputs were tied to ground. For the unbiased condition, all pins were grounded.

The test units, along with control units were tested to the 5962R8771002VPA test program and limits before radiation. They were split into the four test legs and sent through irradiation, according to 1019.7. The units were pulled out at various irradiation points and tested.

Wafer lot number:	JM087X27
Wafer and assembly lot numbers:	1 7W4446D019
	2 7W4450B019
	3 7W4451L019
	4 7W4453G019
	5 7W4454E019
	6 7W4455C019
Radiation board:	9294IR
Test program:	RH0158AXXB

### 3.0 Radiation details

#### 3.1 High dose rate

Radiation site: National Semiconductor, South Portland, Maine  
Radiation rate: 32 rad(Si)/s

Test points: 3, 10, 30, 50, 80, 100 krad(Si)

#### 3.2 Low dose rate

Radiation site: White Sands Missile Range, New Mexico  
Radiation rate: 0.01 rad(Si)/s

Test points:	Wafers 1-3	3.2, 14.0, 31.1, 51.1, 77.8, 103.5 krad(Si)
	Wafers 4-6	4.3, 13.4, 32.9, 48.1, 79.8, 100.0 krad(Si)

### 4.0 Results

A summary of the results is presented in the following tables and graphs. A separate table is presented for each parametric test. The dose rate and bias condition (TEST\_BIAS), the accumulated dose test point (DOSE(k)), the number of units tested (OBS), the average reading (AVG), maximum and minimum readings (MAX, MIN) and standard deviation (SIGMA) are shown for each test leg at the various radiation test points. For the low dose rate legs, the radiation test points are listed and plotted to the nearest radiation level (3, 10, 30, 50, 80 or 100), for ease of calculation and plotting.

The upper and lower datasheet limits for this new product are listed in the columns “UTL” and “LTL”, respectively. The pre irradiation limits are shown at the 0 rad level and the post irradiation limits are shown for all of the other test points.

In the “Delta Median (from 0 rad)” column, the median drift from the pre-irradiation readings is shown. This is denoted as “median  $\Delta_{para}$ ” in section 3.13.1.1 of 1019.7. The last column shows the ratio of the median drift for the LDR to the HDR at the bias condition. According to 1019.7, section 3.13.1.1, “If this ratio exceeds 1.5 for any of the most sensitive parameters then the part is to be considered ELDRS sensitive. This test does not apply to parameters which exhibit changes that are within experimental error or whose values are below the pre-irradiation electrical specification limits at low dose rate at the specification dose.”

Each parametric table is accompanied by 5 graphs. The first graph plots the average reading of each of the four test conditions vs. accumulated dose. The other graphs show the average, maximum and minimum readings for a specific test condition.

For most parametric tests, the LDR drift was less than the HDR drift. For the few parameters where the LDR drift was 1.5 times greater than the HDR drift, all parametric readings were inside the pre irradiation limits. No parameters met both requirements needed to be considered ELDRS sensitive, where the median LDR drift was more than 1.5 times greater than the median HDR drift and where the parametric readings were outside the pre irradiation limits.

## 5.0 Conclusions

National Semiconductor's LM158AxRLQMLV, DSCC SMD part number 5962R8771003VxA has been tested and qualified not to be ELDRS susceptible to a total ionizing dose of 100 krad(Si) according to MIL-STD-883G, Test Method 1019.7.

National Semiconductor will continue to test and qualify each LM158AxRLQMLV wafer according to Condition D of 1019.7 at a dose rate of 10 mrad(Si)/s.

**Rev. B Added LDR/HDR drift ratios for all radiation levels and updated test descriptions and limits.**

# LM158AJRLQMLV

## ELDRS Characterization Data

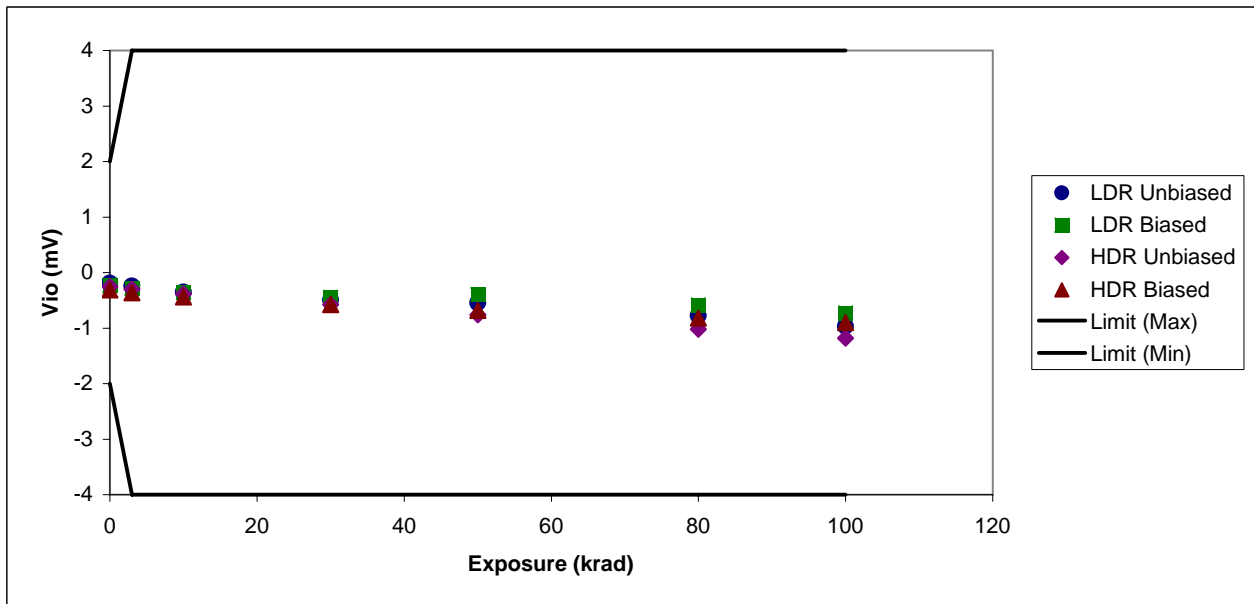
**TEST ID: 1001 Input Offset Voltage; Vio**

Vcc=30V, Vcm=0V, Vo=1.4V (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

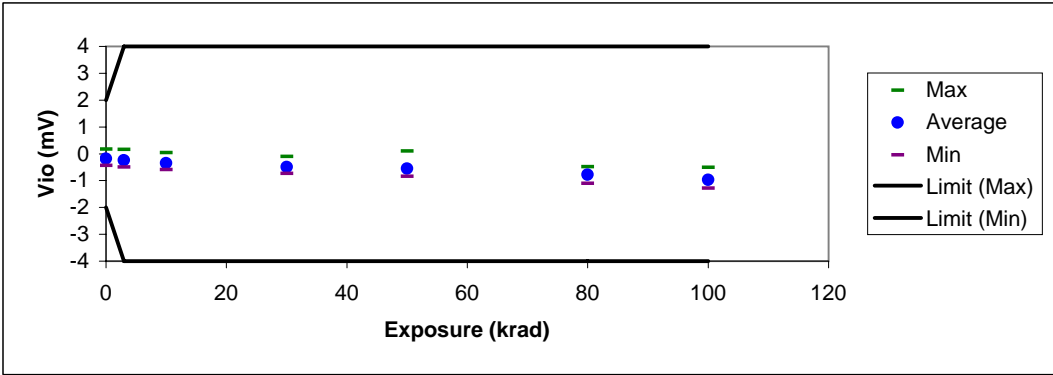
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	-0.222101	0.148991	-0.590677	0.145902	2	-2	0	
LDR_BIASED	3	30	-0.279842	0.0736644	-0.670235	0.14998	4	-4	-0.05771	1.07
LDR_BIASED	10	30	-0.357942	-0.0102165	-0.742341	0.149824	4	-4	-0.13638	1.08
LDR_BIASED	30	30	-0.445844	-0.105791	-0.834568	0.149641	4	-4	-0.22422	0.84
LDR_BIASED	50	30	-0.396295	-0.122988	-0.638178	0.135979	4	-4	-0.17332	0.47
LDR_BIASED	80	30	-0.583992	-0.24713	-1.0422	0.175315	4	-4	-0.39992	0.79
LDR_BIASED	100	30	-0.724619	-0.35613	-1.15031	0.163124	4	-4	-0.47363	0.80
LDR_UNBIAS	0	30	-0.189693	0.16902	-0.438888	0.142744	2	-2	0	
LDR_UNBIAS	3	30	-0.240661	0.156361	-0.498154	0.147364	4	-4	-0.05358	1.12
LDR_UNBIAS	10	30	-0.350351	0.0384727	-0.594864	0.145088	4	-4	-0.15804	1.19
LDR_UNBIAS	30	30	-0.493821	-0.100182	-0.738416	0.147327	4	-4	-0.30401	0.91
LDR_UNBIAS	50	30	-0.548756	0.101839	-0.838294	0.177658	4	-4	-0.37447	0.74
LDR_UNBIAS	80	30	-0.780277	-0.487023	-1.10278	0.17932	4	-4	-0.62431	0.82
LDR_UNBIAS	100	30	-0.968463	-0.503802	-1.28313	0.179762	4	-4	-0.769	0.84
HDR_BIASED	0	31	-0.309934	0.0149181	-0.694937	0.158422	2	-2	0	
HDR_BIASED	3	31	-0.364132	-0.0109368	-0.739936	0.159478	4	-4	-0.05398	
HDR_BIASED	10	31	-0.436494	-0.0759623	-0.812956	0.158734	4	-4	-0.12584	
HDR_BIASED	30	31	-0.578112	-0.225378	-0.956516	0.157418	4	-4	-0.26843	
HDR_BIASED	50	31	-0.680807	-0.324695	-1.07164	0.160734	4	-4	-0.37175	
HDR_BIASED	80	31	-0.817689	-0.45031	-1.21153	0.164569	4	-4	-0.50785	
HDR_BIASED	100	31	-0.901253	-0.542873	-1.31282	0.171199	4	-4	-0.59351	
HDR_UNBIAS	0	30	-0.254076	0.0141341	-0.662701	0.183483	2	-2	0	
HDR_UNBIAS	3	30	-0.302059	-0.0365237	-0.71838	0.185105	4	-4	-0.04772	
HDR_UNBIAS	10	30	-0.388207	-0.100186	-0.789685	0.18822	4	-4	-0.13282	
HDR_UNBIAS	30	30	-0.576441	-0.243695	-0.957146	0.200543	4	-4	-0.33491	
HDR_UNBIAS	50	30	-0.761734	-0.453789	-1.18103	0.201521	4	-4	-0.50421	
HDR_UNBIAS	80	30	-1.01753	-0.711058	-1.5114	0.218049	4	-4	-0.75692	
HDR_UNBIAS	100	30	-1.18086	-0.836481	-1.71468	0.227883	4	-4	-0.92049	

Plot of the average readings for each radiation/bias condition

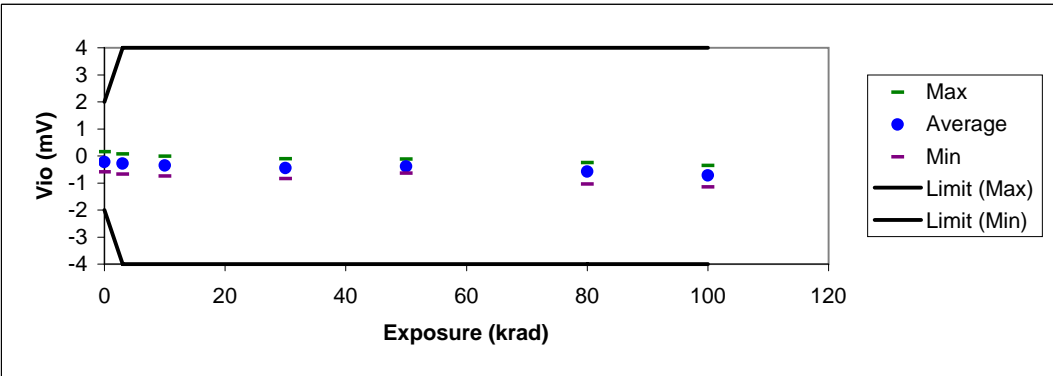


TEST ID: 1001 Input Offset Voltage;  $V_{io}$

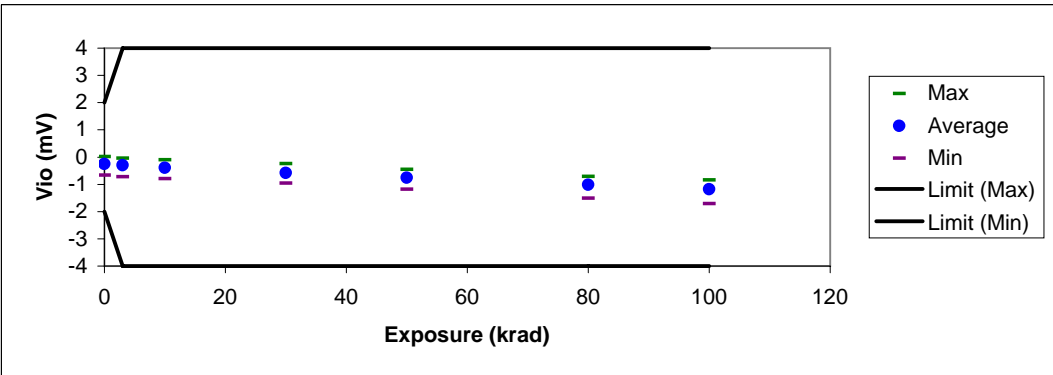
Low dose rate unbiased



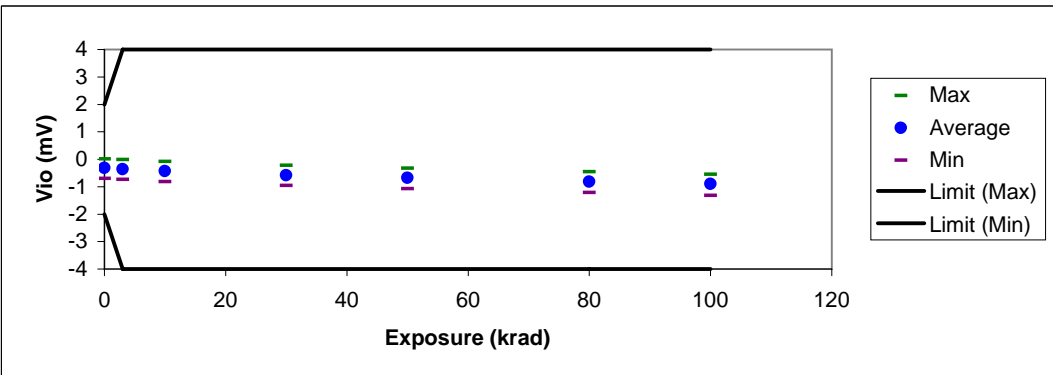
Low dose rate biased



High dose rate unbiased



High dose rate biased



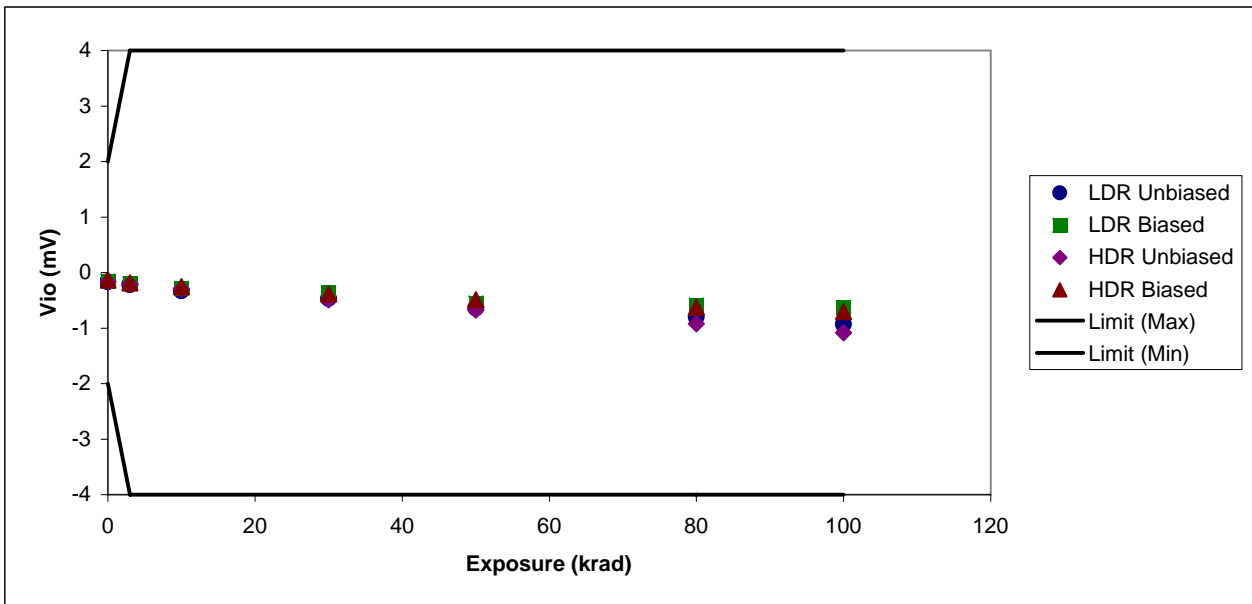
**TEST ID: 2001 Input Offset Voltage; Vio**

Vcc=30V, Vcm=0V, Vo=1.4V (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

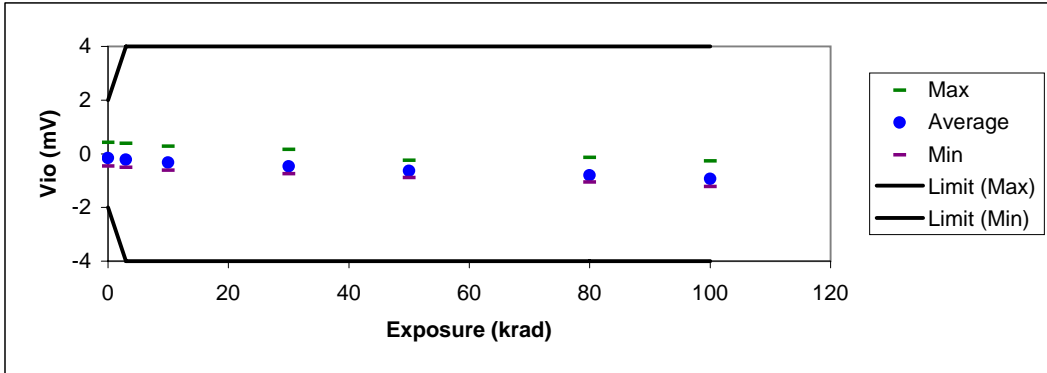
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-0.149901	0.128781	-0.406188	0.137212	2	-2	0	
LDR_BIAS	3	30	-0.202766	0.0496878	-0.465644	0.135022	4	-4	-0.04775	0.96
LDR_BIAS	10	30	-0.282176	-0.0258272	-0.537375	0.135588	4	-4	-0.13375	1.16
LDR_BIAS	30	30	-0.361156	-0.110442	-0.604592	0.135565	4	-4	-0.21044	0.83
LDR_BIAS	50	30	-0.545765	-0.21675	-0.930851	0.150161	4	-4	-0.37955	1.07
LDR_BIAS	80	30	-0.583097	-0.285108	-0.814584	0.143755	4	-4	-0.40178	0.82
LDR_BIAS	100	30	-0.631535	-0.356449	-0.894867	0.14169	4	-4	-0.43751	0.77
LDR_UNBIAS	0	30	-0.164514	0.418343	-0.46401	0.182103	2	-2	0	
LDR_UNBIAS	3	30	-0.217736	0.383787	-0.508014	0.183825	4	-4	-0.05416	1.18
LDR_UNBIAS	10	30	-0.327104	0.283693	-0.618388	0.179826	4	-4	-0.16067	1.21
LDR_UNBIAS	30	30	-0.467819	0.163541	-0.749686	0.179643	4	-4	-0.30123	0.89
LDR_UNBIAS	50	30	-0.639905	-0.247774	-0.888814	0.148129	4	-4	-0.49707	0.99
LDR_UNBIAS	80	30	-0.801737	-0.133266	-1.05725	0.182525	4	-4	-0.62519	0.83
LDR_UNBIAS	100	30	-0.932781	-0.273478	-1.22429	0.190399	4	-4	-0.76214	0.83
HDR_BIAS	0	31	-0.13407	0.404509	-0.439783	0.186437	2	-2	0	
HDR_BIAS	3	31	-0.184526	0.36324	-0.47763	0.18705	4	-4	-0.04952	
HDR_BIAS	10	31	-0.251493	0.27923	-0.55135	0.186557	4	-4	-0.1158	
HDR_BIAS	30	31	-0.387615	0.138147	-0.688726	0.188009	4	-4	-0.25266	
HDR_BIAS	50	31	-0.489537	0.0292781	-0.775303	0.187641	4	-4	-0.35458	
HDR_BIAS	80	31	-0.623605	-0.088022	-0.899453	0.188898	4	-4	-0.49184	
HDR_BIAS	100	31	-0.70595	-0.151593	-0.991373	0.193091	4	-4	-0.57044	
HDR_UNBIAS	0	30	-0.169486	0.132945	-0.733991	0.15181	2	-2	0	
HDR_UNBIAS	3	30	-0.215106	0.0828501	-0.781483	0.15221	4	-4	-0.04582	
HDR_UNBIAS	10	30	-0.30162	-0.0065667	-0.856567	0.149487	4	-4	-0.13287	
HDR_UNBIAS	30	30	-0.487791	-0.222775	-0.99636	0.150241	4	-4	-0.33682	
HDR_UNBIAS	50	30	-0.671693	-0.396158	-1.23814	0.151737	4	-4	-0.50431	
HDR_UNBIAS	80	30	-0.923037	-0.663743	-1.52028	0.157674	4	-4	-0.75177	
HDR_UNBIAS	100	30	-1.08303	-0.770802	-1.72665	0.169605	4	-4	-0.9186	

Plot of the average readings for each radiation/bias condition

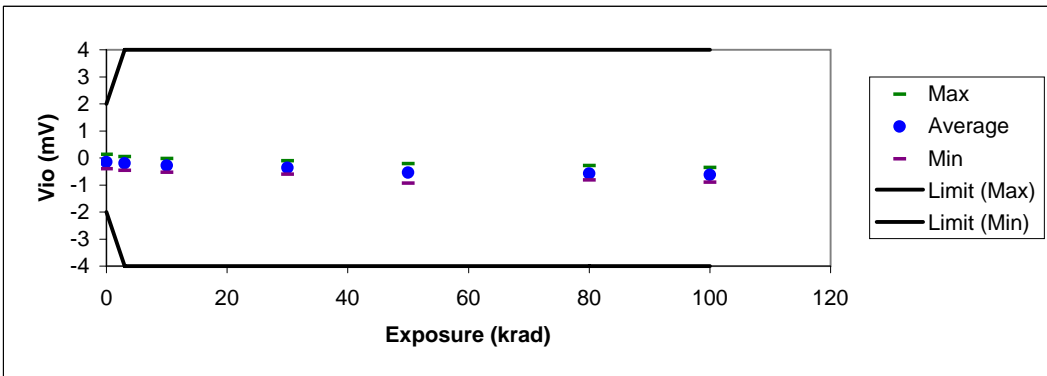


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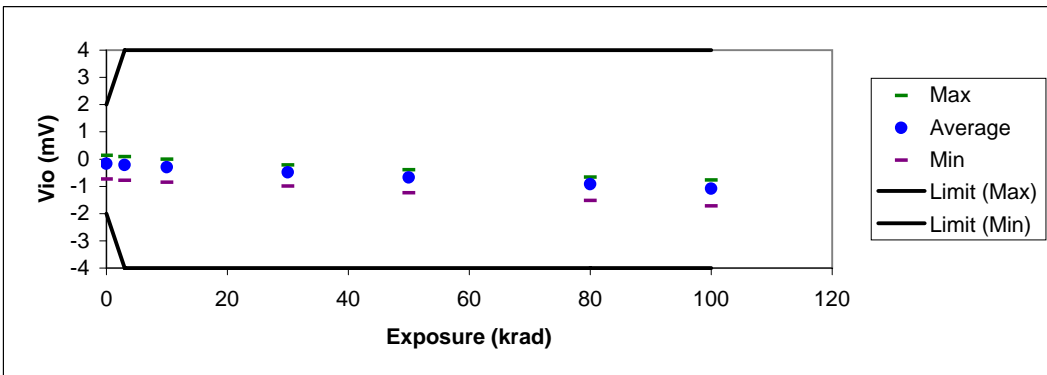
Low dose rate unbiased



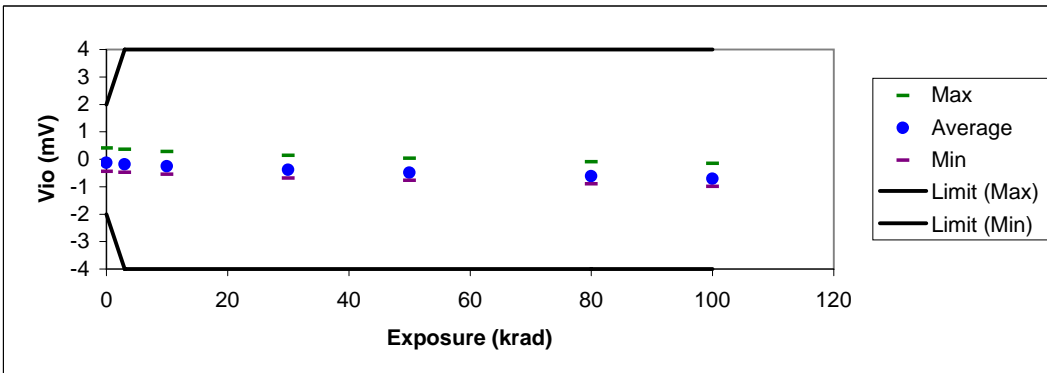
Low dose rate biased



High dose rate unbiased



High dose rate biased



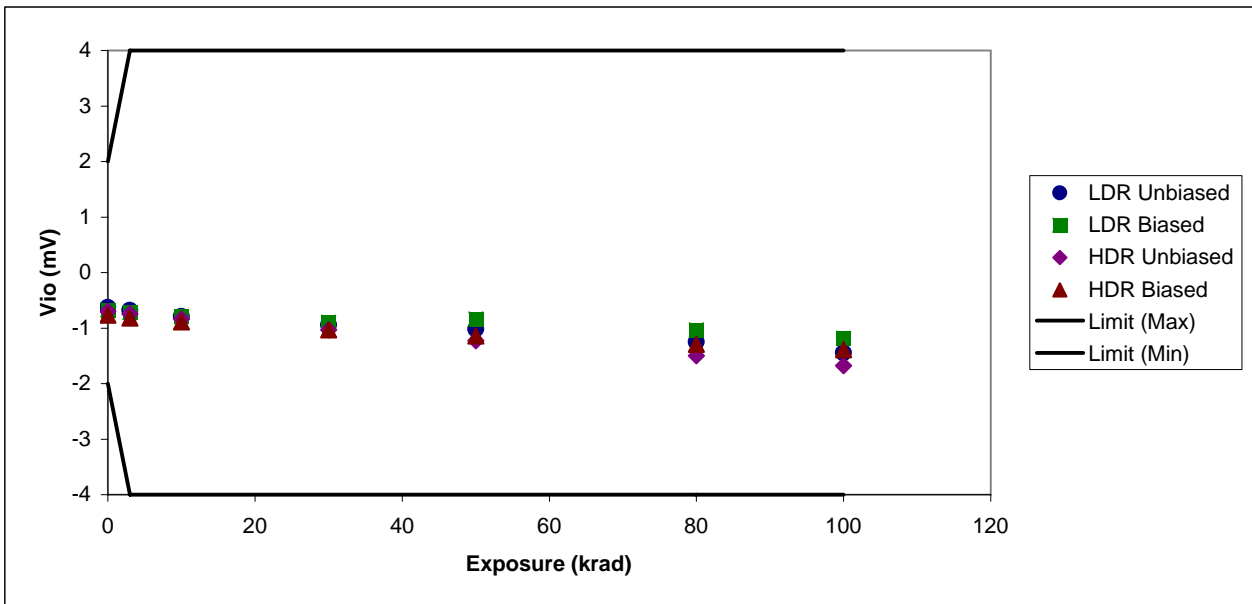
**TEST ID: 1002 Input Offset Voltage; Vio**

Vcc=30V, Vcm=28.5V, Vo=1.4V (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

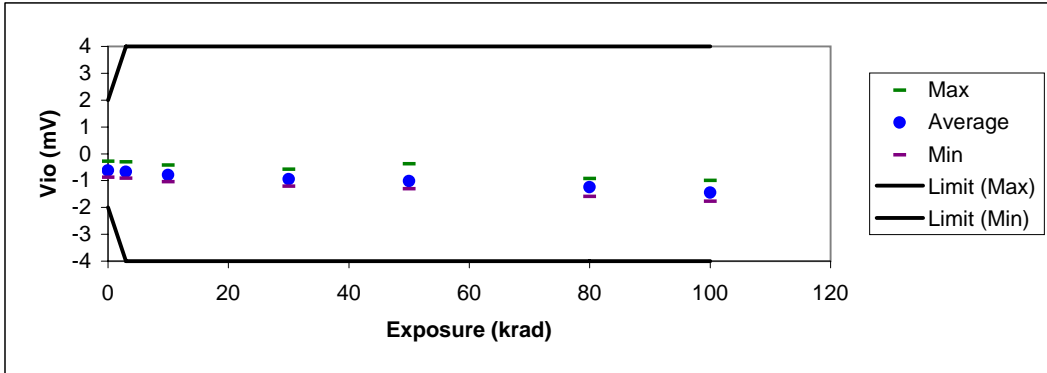
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-0.673128	-0.299738	-1.06029	0.158204	2	-2	0	
LDR_BIAS	3	30	-0.722235	-0.360713	-1.12809	0.162372	4	-4	-0.04976	0.95
LDR_BIAS	10	30	-0.797705	-0.44612	-1.20397	0.161625	4	-4	-0.12223	0.96
LDR_BIAS	30	30	-0.89088	-0.546698	-1.28979	0.164464	4	-4	-0.21597	0.80
LDR_BIAS	50	30	-0.834661	-0.519788	-1.08305	0.147329	4	-4	-0.16761	0.44
LDR_BIAS	80	30	-1.03035	-0.621314	-1.50479	0.194596	4	-4	-0.39655	0.75
LDR_BIAS	100	30	-1.18043	-0.801916	-1.63518	0.179548	4	-4	-0.49911	0.79
LDR_UNBIAS	0	30	-0.630349	-0.283825	-0.881475	0.149543	2	-2	0	
LDR_UNBIAS	3	30	-0.677838	-0.302851	-0.91401	0.151684	4	-4	-0.04532	0.89
LDR_UNBIAS	10	30	-0.790357	-0.425064	-1.04064	0.152531	4	-4	-0.15614	1.13
LDR_UNBIAS	30	30	-0.943541	-0.574234	-1.2097	0.156531	4	-4	-0.3112	0.88
LDR_UNBIAS	50	30	-1.01769	-0.378923	-1.30338	0.181071	4	-4	-0.36783	0.71
LDR_UNBIAS	80	30	-1.25079	-0.926655	-1.58986	0.190432	4	-4	-0.65069	0.82
LDR_UNBIAS	100	30	-1.44555	-0.992136	-1.76966	0.19899	4	-4	-0.81972	0.84
HDR_BIAS	0	31	-0.763758	-0.412869	-1.2502	0.182162	2	-2	0	
HDR_BIAS	3	31	-0.81589	-0.446025	-1.2953	0.183185	4	-4	-0.05219	
HDR_BIAS	10	31	-0.890192	-0.510709	-1.3635	0.183009	4	-4	-0.12775	
HDR_BIAS	30	31	-1.03371	-0.66301	-1.5165	0.183095	4	-4	-0.26979	
HDR_BIAS	50	31	-1.1427	-0.760341	-1.63823	0.18806	4	-4	-0.37851	
HDR_BIAS	80	31	-1.29201	-0.900883	-1.80658	0.194895	4	-4	-0.53075	
HDR_BIAS	100	31	-1.39023	-0.997825	-1.92427	0.201187	4	-4	-0.6293	
HDR_UNBIAS	0	30	-0.697132	-0.411383	-1.06808	0.192411	2	-2	0	
HDR_UNBIAS	3	30	-0.745665	-0.449958	-1.12337	0.193862	4	-4	-0.05067	
HDR_UNBIAS	10	30	-0.834287	-0.526466	-1.20095	0.198196	4	-4	-0.13801	
HDR_UNBIAS	30	30	-1.03114	-0.681544	-1.40714	0.21219	4	-4	-0.35348	
HDR_UNBIAS	50	30	-1.22722	-0.892074	-1.60973	0.217025	4	-4	-0.5212	
HDR_UNBIAS	80	30	-1.50099	-1.13721	-1.97581	0.236833	4	-4	-0.79279	
HDR_UNBIAS	100	30	-1.67745	-1.27793	-2.19522	0.249592	4	-4	-0.97109	

Plot of the average readings for each radiation/bias condition

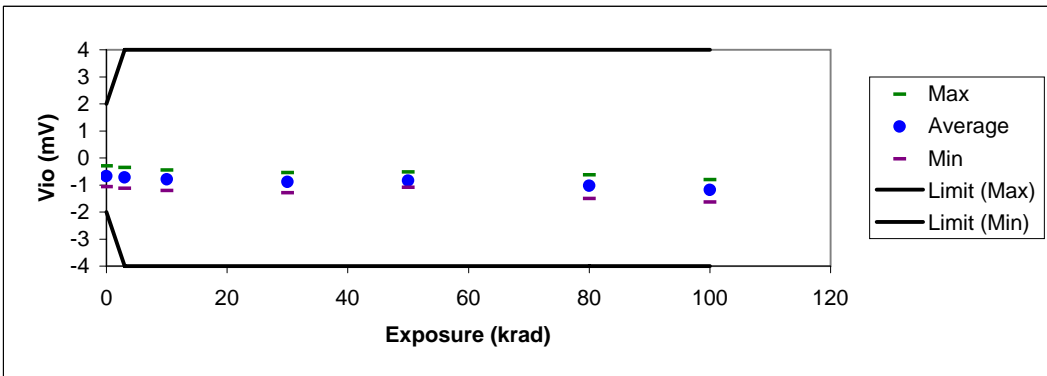


TEST ID: 1002 Input Offset Voltage; Vio

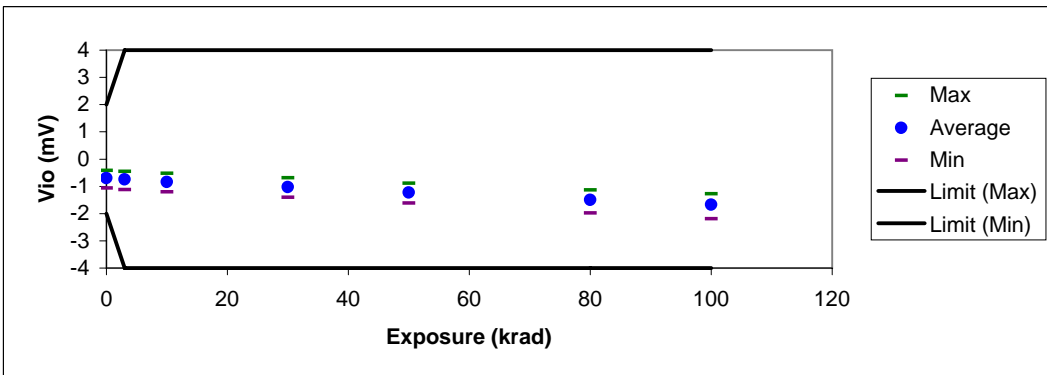
Low dose rate unbiased



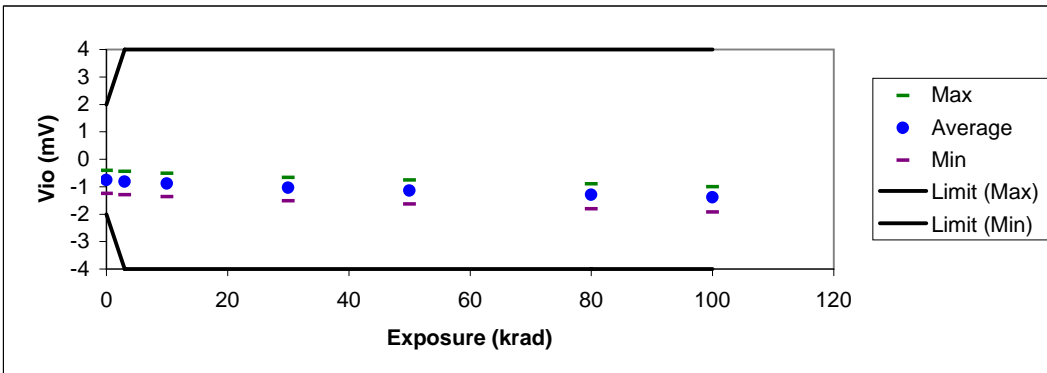
Low dose rate biased



High dose rate unbiased



High dose rate biased



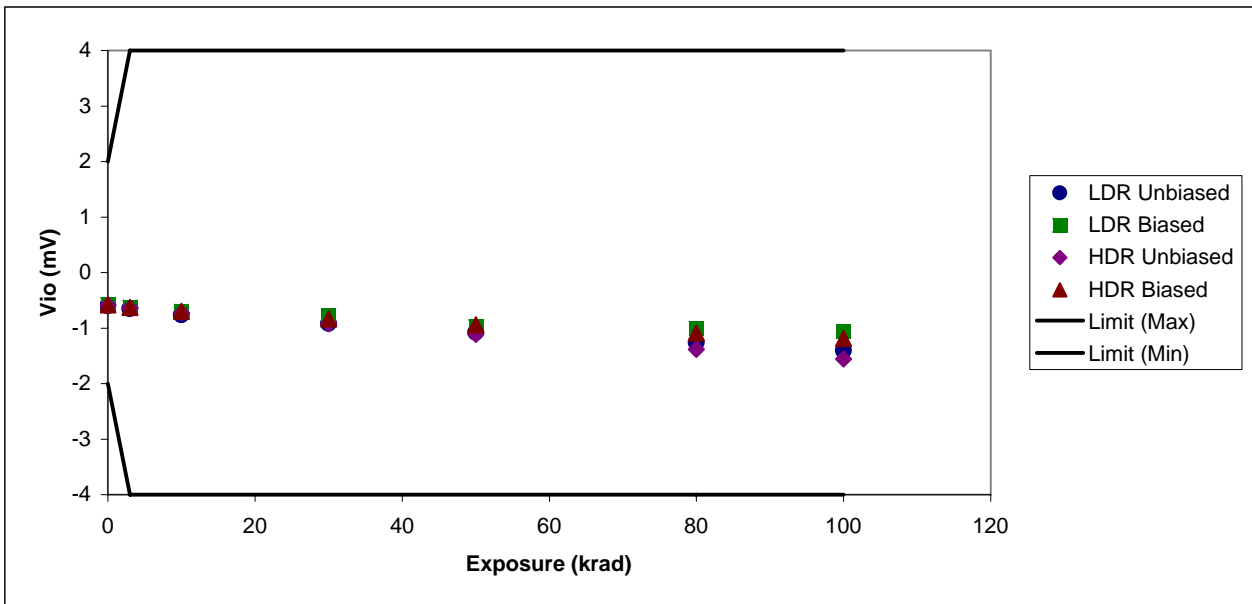
**TEST ID: 2002 Input Offset Voltage; Vio**

Vcc=30V, Vcm=28.5V, Vo=1.4V (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

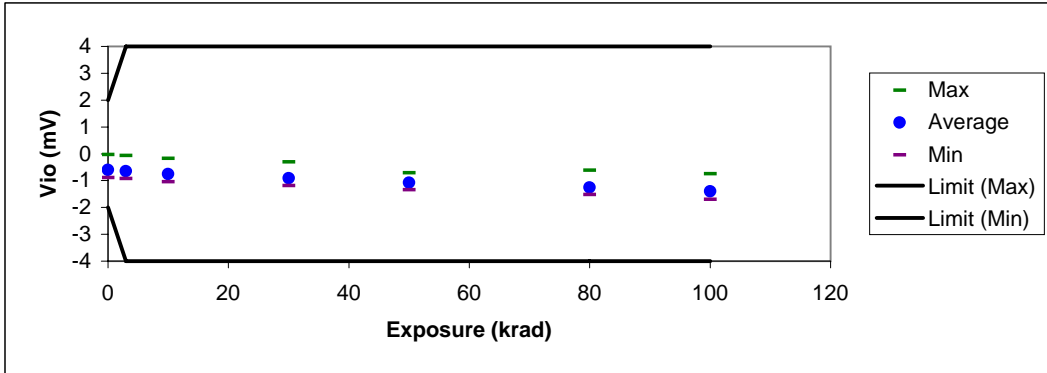
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-0.575776	-0.250498	-0.85278	0.148551	2	-2	0	
LDR_BIAS	3	30	-0.620762	-0.319352	-0.905709	0.148496	4	-4	-0.04005	0.84
LDR_BIAS	10	30	-0.698251	-0.392841	-0.975729	0.148213	4	-4	-0.1261	1.09
LDR_BIAS	30	30	-0.780211	-0.478738	-1.04853	0.148167	4	-4	-0.2111	0.84
LDR_BIAS	50	30	-0.974167	-0.631197	-1.36285	0.165547	4	-4	-0.3703	1.03
LDR_BIAS	80	30	-1.00826	-0.670243	-1.24371	0.153349	4	-4	-0.40403	0.79
LDR_BIAS	100	30	-1.06191	-0.727492	-1.34529	0.156062	4	-4	-0.40997	0.67
LDR_UNBIAS	0	30	-0.600702	-0.0286699	-0.891673	0.183397	2	-2	0	
LDR_UNBIAS	3	30	-0.650556	-0.0673792	-0.928285	0.185048	4	-4	-0.04861	1.00
LDR_UNBIAS	10	30	-0.762333	-0.171502	-1.04669	0.180683	4	-4	-0.16125	1.19
LDR_UNBIAS	30	30	-0.9139	-0.299616	-1.18857	0.182263	4	-4	-0.31454	0.90
LDR_UNBIAS	50	30	-1.07813	-0.705673	-1.34378	0.159391	4	-4	-0.51086	0.96
LDR_UNBIAS	80	30	-1.26012	-0.611035	-1.52517	0.191021	4	-4	-0.64003	0.81
LDR_UNBIAS	100	30	-1.40597	-0.746489	-1.69628	0.200623	4	-4	-0.80701	0.83
HDR_BIAS	0	31	-0.579521	-0.0660622	-0.922394	0.188716	2	-2	0	
HDR_BIAS	3	31	-0.628512	-0.111787	-0.962761	0.19007	4	-4	-0.04772	
HDR_BIAS	10	31	-0.695767	-0.194763	-1.03615	0.190437	4	-4	-0.11613	
HDR_BIAS	30	31	-0.833383	-0.333232	-1.17438	0.192283	4	-4	-0.25085	
HDR_BIAS	50	31	-0.941109	-0.44671	-1.28199	0.193104	4	-4	-0.35793	
HDR_BIAS	80	31	-1.08783	-0.581045	-1.44176	0.197084	4	-4	-0.51077	
HDR_BIAS	100	31	-1.18598	-0.650071	-1.54283	0.206338	4	-4	-0.61081	
HDR_UNBIAS	0	30	-0.589864	-0.316179	-1.24118	0.167655	2	-2	0	
HDR_UNBIAS	3	30	-0.63742	-0.371491	-1.2861	0.165968	4	-4	-0.04874	
HDR_UNBIAS	10	30	-0.724804	-0.46271	-1.3666	0.166301	4	-4	-0.13555	
HDR_UNBIAS	30	30	-0.920492	-0.59472	-1.50967	0.171567	4	-4	-0.35043	
HDR_UNBIAS	50	30	-1.1138	-0.810596	-1.75578	0.174021	4	-4	-0.5296	
HDR_UNBIAS	80	30	-1.3816	-1.0706	-2.06819	0.184414	4	-4	-0.78753	
HDR_UNBIAS	100	30	-1.55389	-1.18577	-2.28768	0.198853	4	-4	-0.96942	

Plot of the average readings for each radiation/bias condition

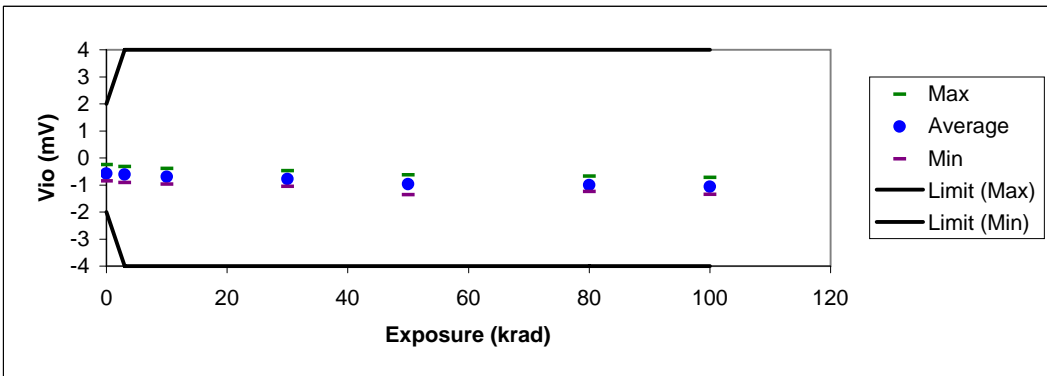


TEST ID: 2002 Input Offset Voltage; Vio

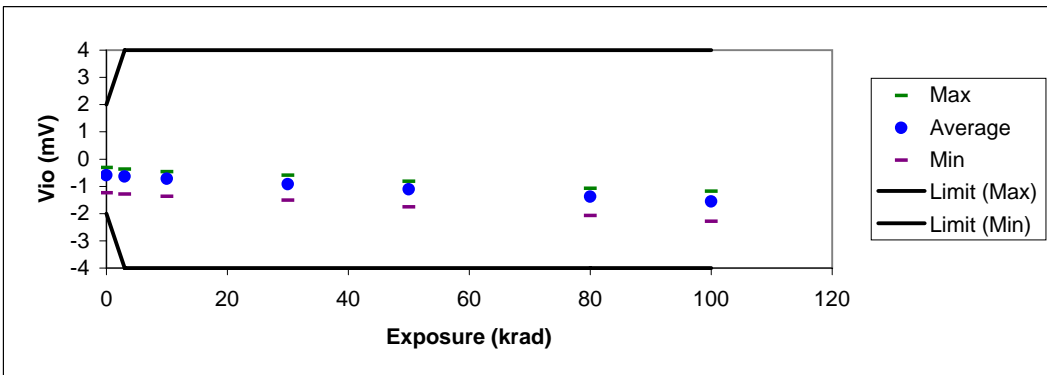
Low dose rate unbiased



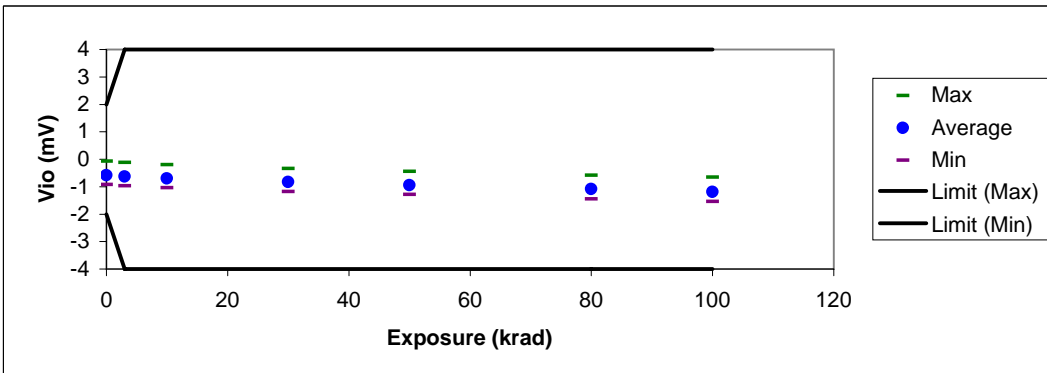
Low dose rate biased



High dose rate unbiased



High dose rate biased



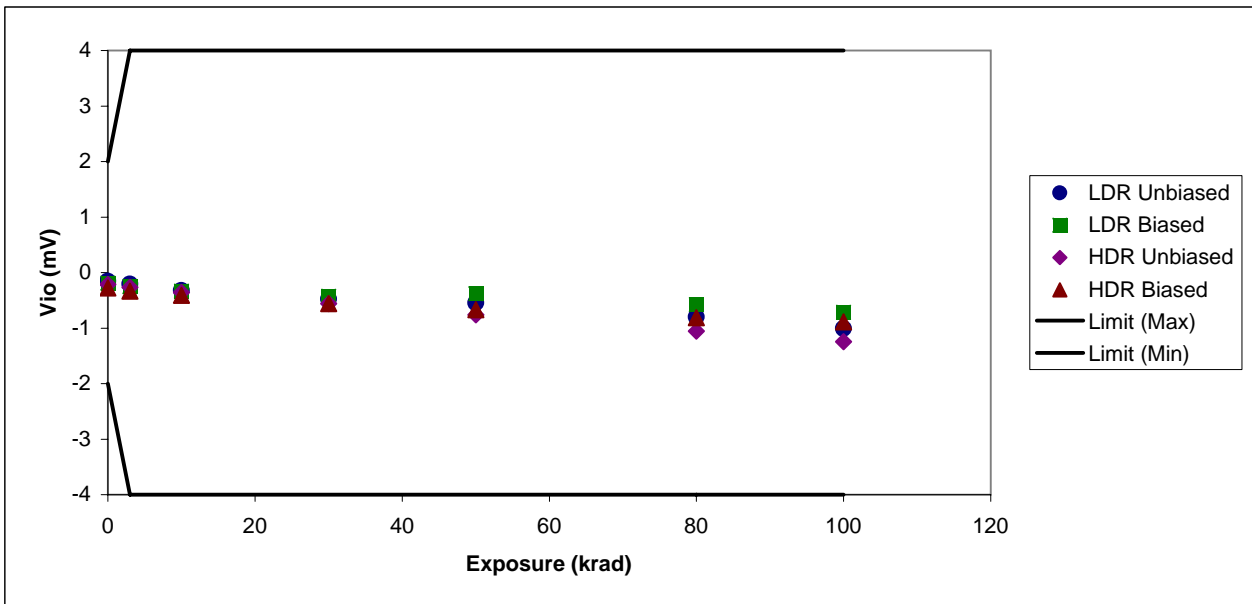
**TEST ID: 1003 Input Offset Voltage; Vio**

+Vcc=5V, Vcm=0V, Vo=1.4V (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

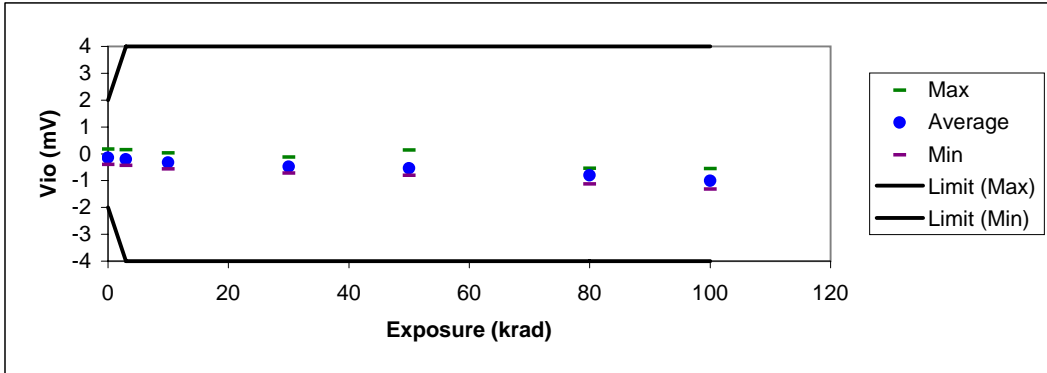
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-0.19116	0.169209	-0.586098	0.145843	2	-2	0	
LDR_BIAS	3	30	-0.251269	0.0912804	-0.65475	0.148348	4	-4	-0.05805	1.01
LDR_BIAS	10	30	-0.333514	0.0086261	-0.733705	0.149382	4	-4	-0.1424	1.09
LDR_BIAS	30	30	-0.425453	-0.0972025	-0.829422	0.148899	4	-4	-0.23609	0.85
LDR_BIAS	50	30	-0.380606	-0.1296	-0.594249	0.130151	4	-4	-0.17276	0.44
LDR_BIAS	80	30	-0.576122	-0.244113	-1.04446	0.174948	4	-4	-0.42074	0.78
LDR_BIAS	100	30	-0.7174	-0.355515	-1.14761	0.165296	4	-4	-0.51865	0.85
LDR_UNBIAS	0	30	-0.153875	0.16902	-0.401092	0.134323	2	-2	0	
LDR_UNBIAS	3	30	-0.207187	0.148613	-0.438321	0.139003	4	-4	-0.05441	1.10
LDR_UNBIAS	10	30	-0.3323051	0.0239244	-0.571018	0.13923	4	-4	-0.16713	1.17
LDR_UNBIAS	30	30	-0.479063	-0.120576	-0.721796	0.143762	4	-4	-0.3204	0.88
LDR_UNBIAS	50	30	-0.545151	0.132345	-0.809964	0.175459	4	-4	-0.4039	0.74
LDR_UNBIAS	80	30	-0.80005	-0.537449	-1.12512	0.177781	4	-4	-0.67072	0.81
LDR_UNBIAS	100	30	-1.00877	-0.559943	-1.32207	0.186749	4	-4	-0.83861	0.82
HDR_BIAS	0	31	-0.275937	0.0161953	-0.668724	0.155467	2	-2	0	
HDR_BIAS	3	31	-0.333741	-0.0108895	-0.718028	0.1577	4	-4	-0.05766	
HDR_BIAS	10	31	-0.409645	-0.086359	-0.793308	0.156311	4	-4	-0.13016	
HDR_BIAS	30	31	-0.558289	-0.240069	-0.947112	0.154932	4	-4	-0.27905	
HDR_BIAS	50	31	-0.667787	-0.338913	-1.06731	0.159298	4	-4	-0.39701	
HDR_BIAS	80	31	-0.811793	-0.473316	-1.2358	0.166551	4	-4	-0.54104	
HDR_BIAS	100	31	-0.886019	-0.563135	-1.33771	0.175076	4	-4	-0.61033	
HDR_UNBIAS	0	30	-0.214886	0.0434308	-0.602644	0.176869	2	-2	0	
HDR_UNBIAS	3	30	-0.264765	0.0006898	-0.673608	0.178708	4	-4	-0.04933	
HDR_UNBIAS	10	30	-0.355709	-0.079025	-0.744734	0.181435	4	-4	-0.14278	
HDR_UNBIAS	30	30	-0.55898	-0.228153	-0.948689	0.196895	4	-4	-0.36492	
HDR_UNBIAS	50	30	-0.762922	-0.451141	-1.18326	0.202149	4	-4	-0.5451	
HDR_UNBIAS	80	30	-1.05707	-0.736324	-1.55836	0.224303	4	-4	-0.83003	
HDR_UNBIAS	100	30	-1.24677	-0.876485	-1.7967	0.239736	4	-4	-1.02136	

Plot of the average readings for each radiation/bias condition

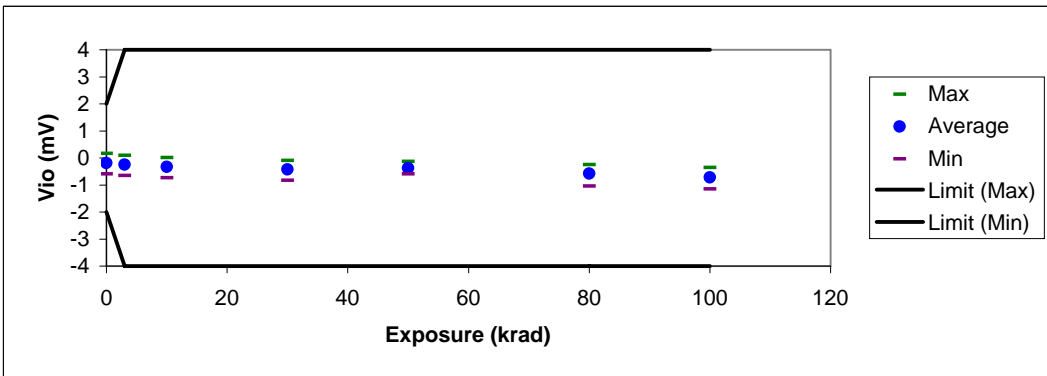


TEST ID: 1003 Input Offset Voltage;  $V_{io}$

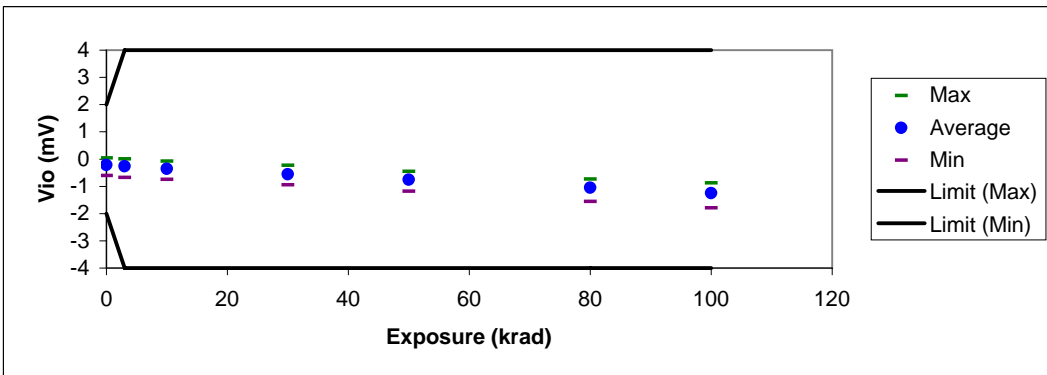
Low dose rate unbiased



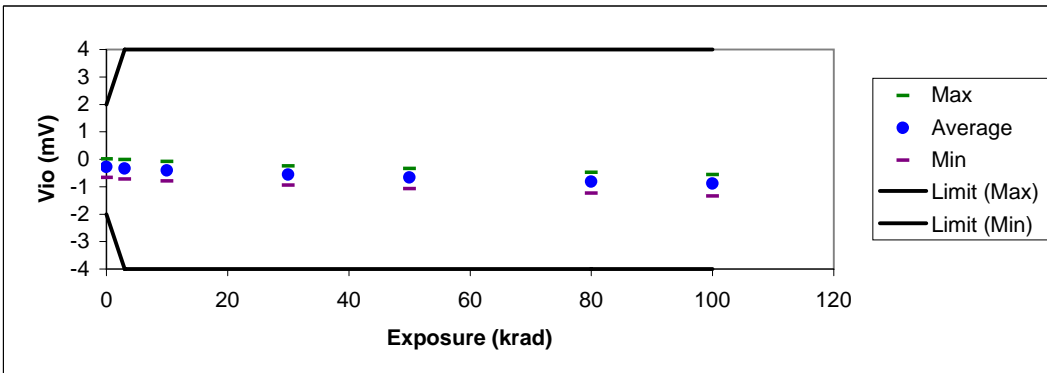
Low dose rate biased



High dose rate unbiased



High dose rate biased



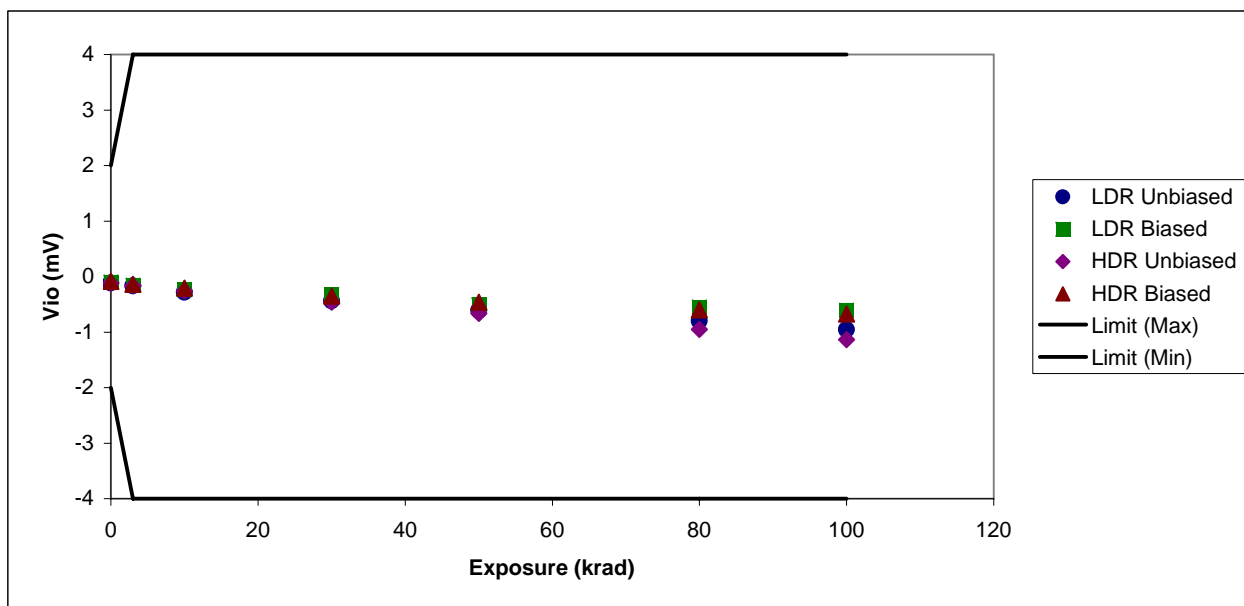
**TEST ID: 2003 Input Offset Voltage; Vio**

+Vcc=5V, Vcm=0V, Vo=1.4V (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

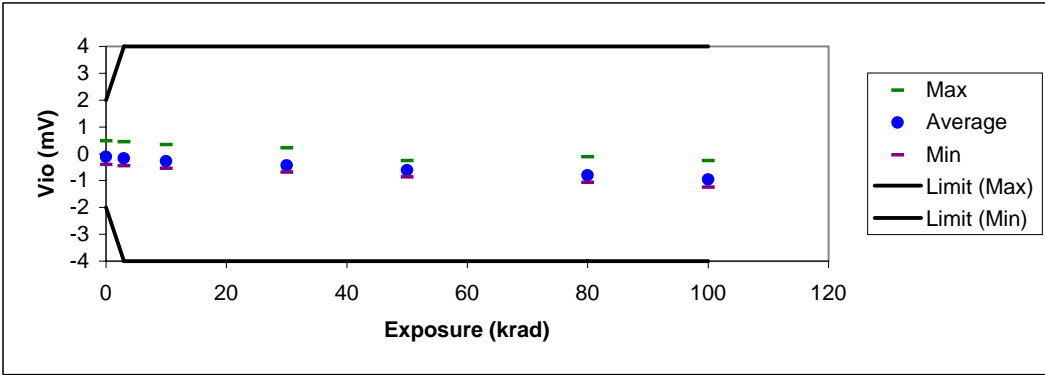
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-0.0994454	0.166734	-0.346369	0.131877	2	-2	0	
LDR_BIAS	3	30	-0.155915	0.0785361	-0.406827	0.130339	4	-4	-0.05388	1.01
LDR_BIAS	10	30	-0.23829	-0.00049493	-0.479355	0.130526	4	-4	-0.13844	1.14
LDR_BIAS	30	30	-0.320682	-0.0809382	-0.545337	0.129883	4	-4	-0.2234	0.84
LDR_BIAS	50	30	-0.506152	-0.18184	-0.9097	0.151102	4	-4	-0.39425	1.05
LDR_BIAS	80	30	-0.549695	-0.275133	-0.752919	0.137644	4	-4	-0.42566	0.83
LDR_BIAS	100	30	-0.604801	-0.331734	-0.847568	0.134182	4	-4	-0.44506	0.74
LDR_UNBIAS	0	30	-0.114214	0.484044	-0.39964	0.179263	2	-2	0	
LDR_UNBIAS	3	30	-0.169083	0.447725	-0.449329	0.180668	4	-4	-0.05449	1.12
LDR_UNBIAS	10	30	-0.28285	0.345693	-0.54529	0.176806	4	-4	-0.16682	1.24
LDR_UNBIAS	30	30	-0.435836	0.220277	-0.689967	0.177694	4	-4	-0.32061	0.89
LDR_UNBIAS	50	30	-0.609484	-0.254701	-0.866047	0.144739	4	-4	-0.54429	1.00
LDR_UNBIAS	80	30	-0.799604	-0.108789	-1.07293	0.18943	4	-4	-0.68077	0.83
LDR_UNBIAS	100	30	-0.957836	-0.261667	-1.25157	0.196339	4	-4	-0.81193	0.80
HDR_BIAS	0	31	-0.0872786	0.44403	-0.354558	0.176196	2	-2	0	
HDR_BIAS	3	31	-0.139485	0.400718	-0.407697	0.17673	4	-4	-0.05314	
HDR_BIAS	10	31	-0.209361	0.322589	-0.482082	0.177149	4	-4	-0.12144	
HDR_BIAS	30	31	-0.352162	0.175007	-0.627848	0.178065	4	-4	-0.26664	
HDR_BIAS	50	31	-0.461488	0.0548017	-0.724953	0.177327	4	-4	-0.37726	
HDR_BIAS	80	31	-0.600755	-0.0725144	-0.866938	0.180248	4	-4	-0.51238	
HDR_BIAS	100	31	-0.677009	-0.115066	-0.961488	0.189118	4	-4	-0.59748	
HDR_UNBIAS	0	30	-0.12008	0.173404	-0.660322	0.143914	2	-2	0	
HDR_UNBIAS	3	30	-0.167849	0.115109	-0.709467	0.144008	4	-4	-0.04846	
HDR_UNBIAS	10	30	-0.257191	0.0185689	-0.79124	0.142807	4	-4	-0.13417	
HDR_UNBIAS	30	30	-0.459333	-0.197167	-0.940431	0.145064	4	-4	-0.35928	
HDR_UNBIAS	50	30	-0.661501	-0.402314	-1.20152	0.146703	4	-4	-0.54318	
HDR_UNBIAS	80	30	-0.950218	-0.69452	-1.53504	0.156552	4	-4	-0.82251	
HDR_UNBIAS	100	30	-1.13713	-0.810406	-1.76897	0.171359	4	-4	-1.0182	

Plot of the average readings for each radiation/bias condition

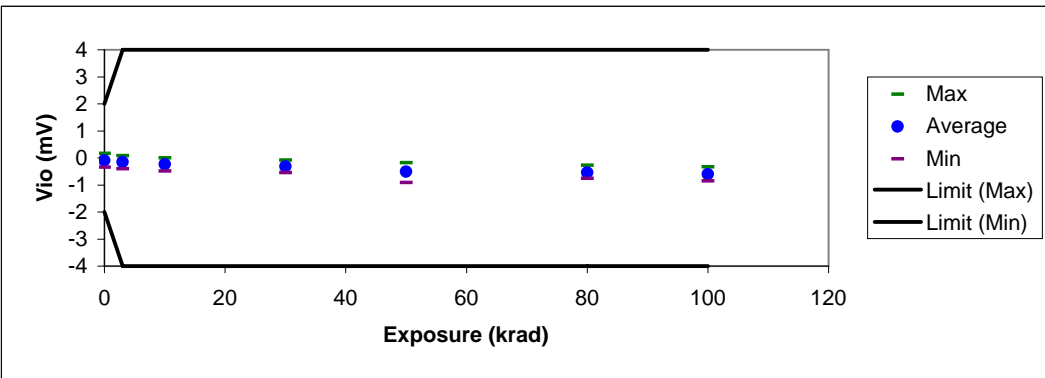


TEST ID: 2003 Input Offset Voltage;  $V_{io}$

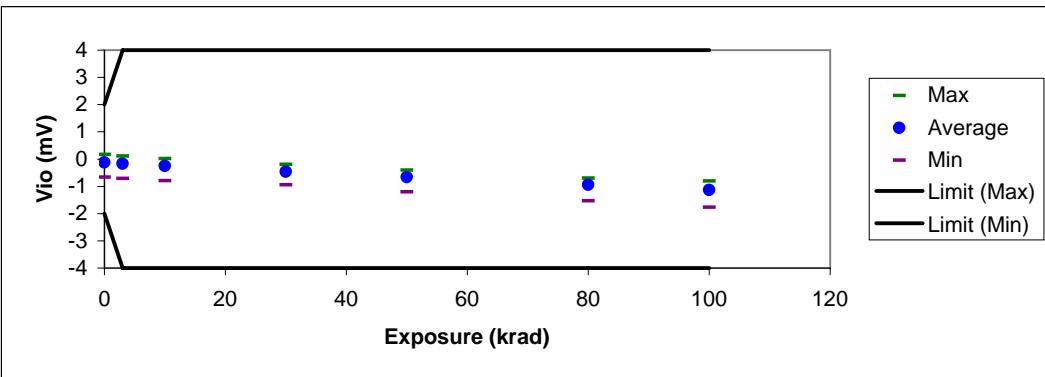
Low dose rate unbiased



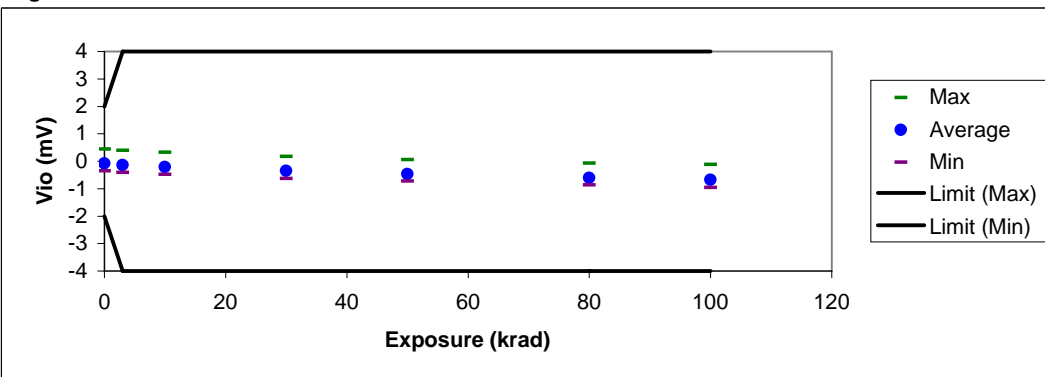
Low dose rate biased



High dose rate unbiased



High dose rate biased



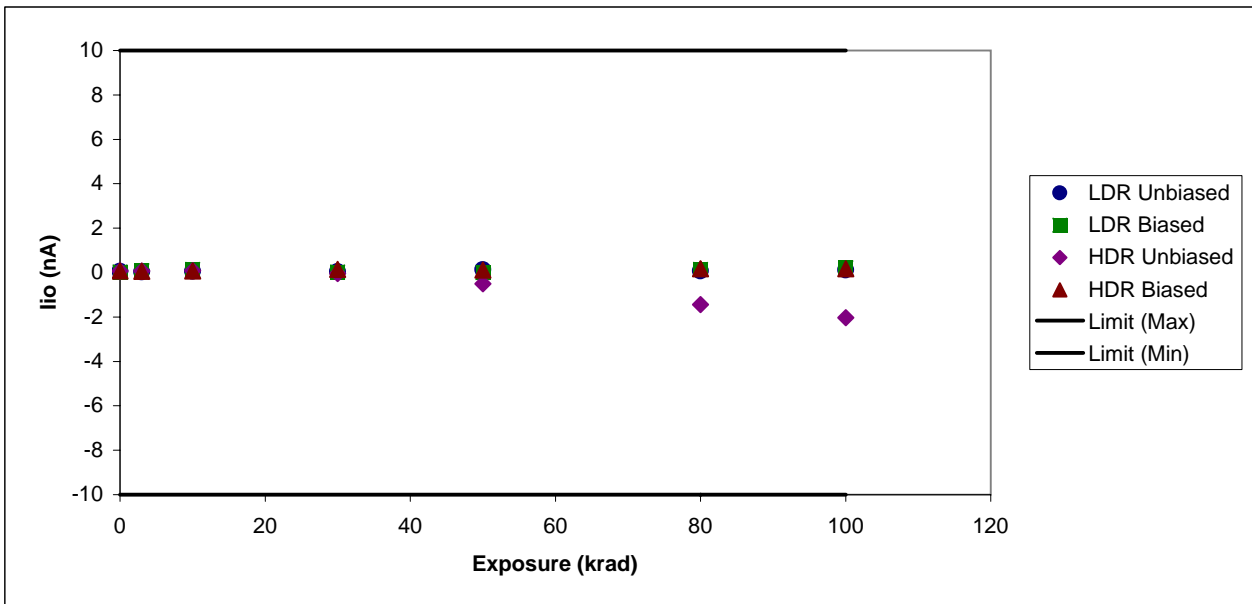
**TEST ID: 1004 Input Offset Current; I<sub>IO</sub>**

+V<sub>CC</sub>=5V, V<sub>O</sub>=1.4V (nA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

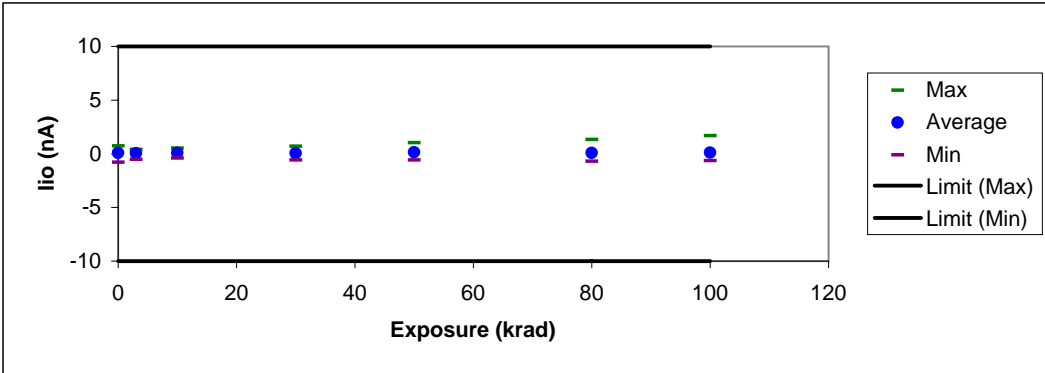
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	0.0354143	0.806999	-0.98661	0.392226	10	-10	0	
LDR_BIAS	3	30	0.0878414	0.509175	-0.250925	0.171736	10	-10	0.02564	10.51
LDR_BIAS	10	30	0.141431	0.49528	-0.367756	0.212917	10	-10	0.07923	4.05
LDR_BIAS	30	30	0.0255277	0.809305	-0.648626	0.334226	10	-10	-0.11078	-1.42
LDR_BIAS	50	30	0.00177422	0.831282	-0.538723	0.237229	10	-10	-0.04098	-3.98
LDR_BIAS	80	30	0.141753	0.762604	-0.324739	0.246027	10	-10	0.03393	0.35
LDR_BIAS	100	30	0.211455	0.916256	-0.602228	0.341662	10	-10	0.15292	1.70
LDR_UNBIAS	0	30	0.0603908	0.740567	-0.775263	0.37063	10	-10	0	
LDR_UNBIAS	3	30	0.0354937	0.402796	-0.516501	0.235773	10	-10	-0.04394	2.81
LDR_UNBIAS	10	30	0.0613789	0.534349	-0.390255	0.225909	10	-10	-0.04382	-2.11
LDR_UNBIAS	30	30	0.0481093	0.690662	-0.58705	0.247323	10	-10	-0.02554	0.51
LDR_UNBIAS	50	30	0.12391	1.03452	-0.577799	0.355326	10	-10	-0.05	0.11
LDR_UNBIAS	80	30	0.0705471	1.32117	-0.695355	0.396389	10	-10	0.05861	-0.04
LDR_UNBIAS	100	30	0.111716	1.67236	-0.631534	0.44068	10	-10	-0.08055	0.04
HDR_BIAS	0	31	0.0672526	0.275382	-0.146496	0.110478	10	-10	0	
HDR_BIAS	3	31	0.0611758	0.341302	-0.163066	0.132325	10	-10	0.00244	
HDR_BIAS	10	31	0.0668801	0.304162	-0.188002	0.126334	10	-10	0.01954	
HDR_BIAS	30	31	0.14333	0.509772	-0.233872	0.183164	10	-10	0.07813	
HDR_BIAS	50	31	0.117891	0.611287	-0.244157	0.215591	10	-10	0.01029	
HDR_BIAS	80	31	0.166403	0.879858	-0.314444	0.245201	10	-10	0.09766	
HDR_BIAS	100	31	0.16971	0.894509	-0.312006	0.26122	10	-10	0.08982	
HDR_UNBIAS	0	30	0.0745339	0.302212	-0.109864	0.114302	10	-10	0	
HDR_UNBIAS	3	30	0.067408	0.331514	-0.146478	0.124535	10	-10	-0.01561	
HDR_UNBIAS	10	30	0.0882108	0.409116	-0.224087	0.168096	10	-10	0.02075	
HDR_UNBIAS	30	30	-0.0416618	0.595186	-0.896879	0.33053	10	-10	-0.05005	
HDR_UNBIAS	50	30	-0.497739	0.160611	-1.54281	0.432059	10	-10	-0.46431	
HDR_UNBIAS	80	30	-1.43627	-0.355929	-2.79021	0.727723	10	-10	-1.31724	
HDR_UNBIAS	100	30	-2.03289	-0.497529	-3.65588	0.948262	10	-10	-2.0032	

Plot of the average readings for each radiation/bias condition

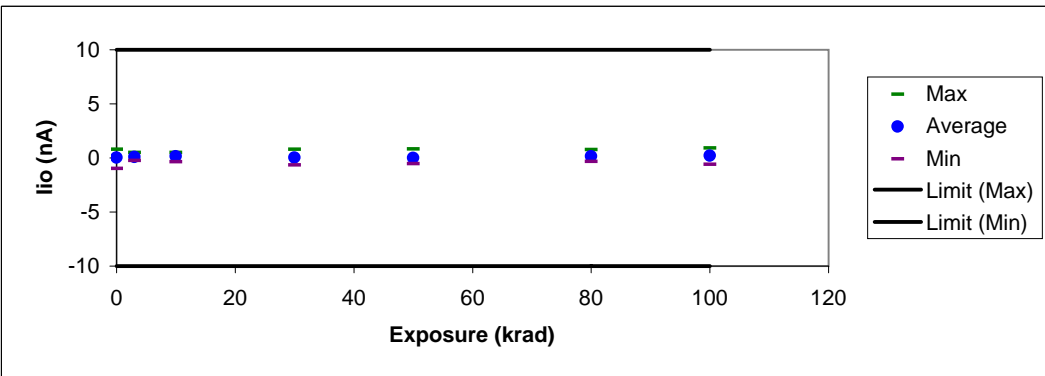


TEST ID: 1004 Input Offset Current;  $i_{io}$

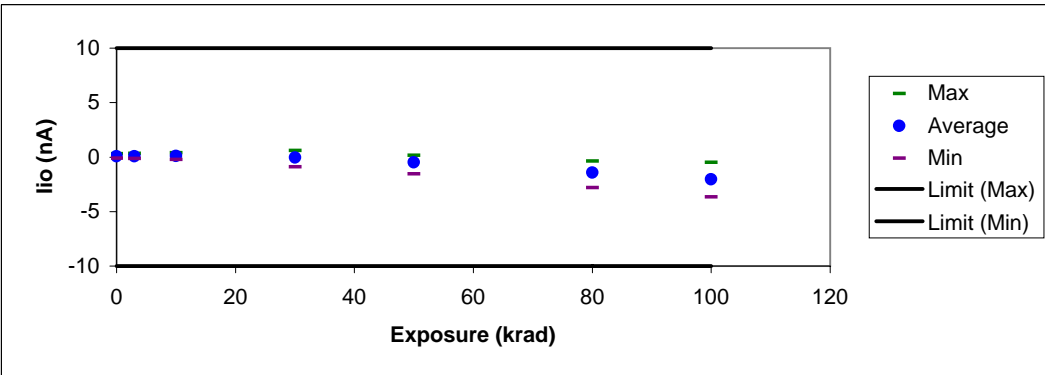
Low dose rate unbiased



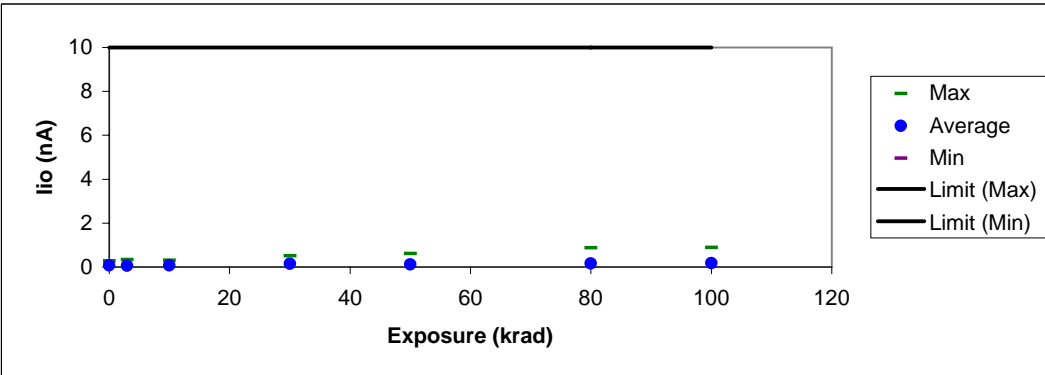
Low dose rate biased



High dose rate unbiased



High dose rate biased



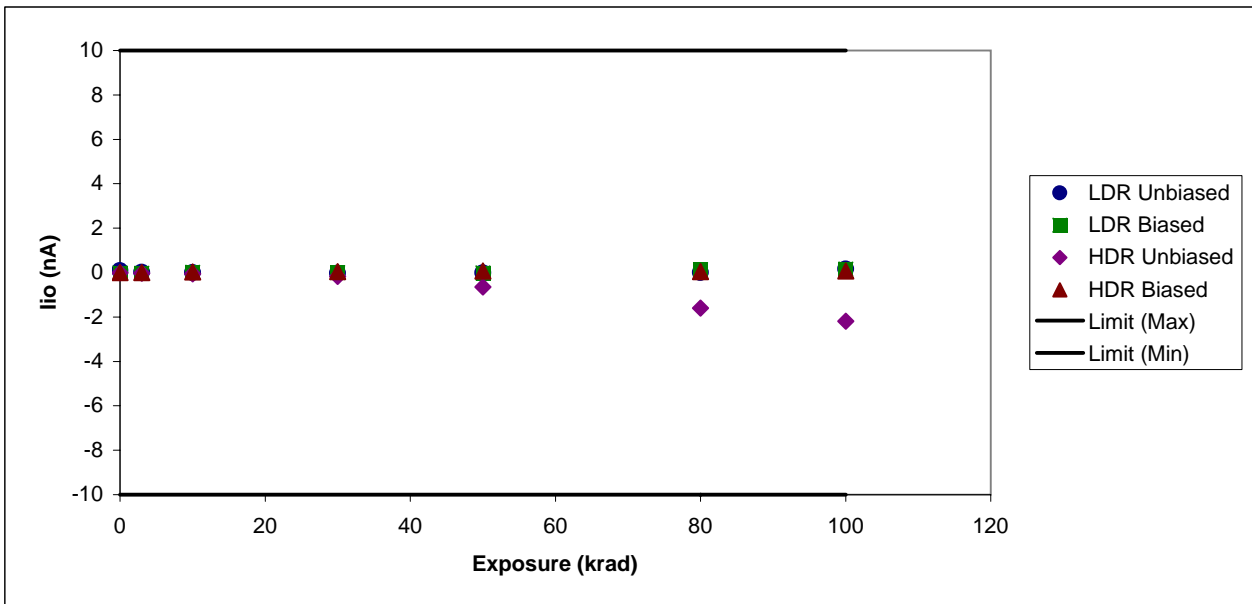
**TEST ID: 2004 Input Offset Current; I<sub>IO</sub>**

+V<sub>CC</sub>=5V, V<sub>O</sub>=1.4V (nA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

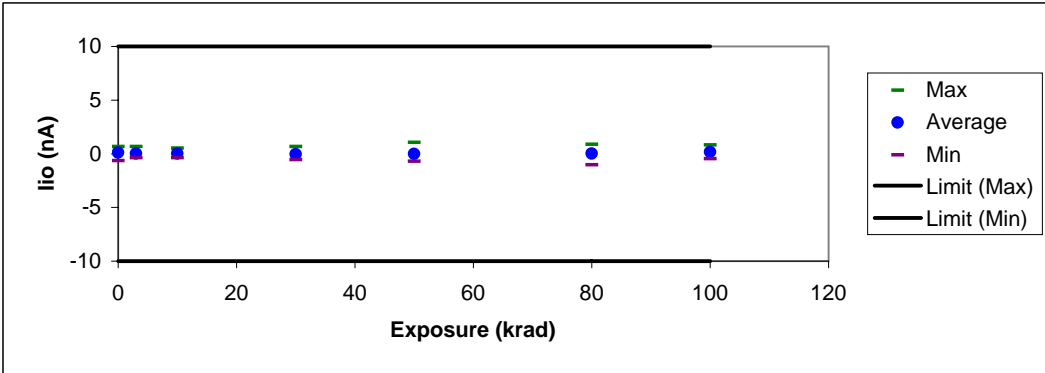
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	-0.0140852	0.666699	-1.05682	0.350577	10	-10	0	
LDR_BIASED	3	30	-0.0295626	0.218204	-0.360114	0.160198	10	-10	-0.0759	6.18
LDR_BIASED	10	30	0.0173841	0.399545	-0.301764	0.178823	10	-10	0.00394	0.23
LDR_BIASED	30	30	-0.00585037	0.765731	-0.380926	0.264726	10	-10	-0.09363	-31.42
LDR_BIASED	50	30	-0.0178108	0.738179	-0.682171	0.356853	10	-10	-0.06144	-1.10
LDR_BIASED	80	30	0.129109	0.627885	-0.441087	0.259218	10	-10	0.15205	2.13
LDR_BIASED	100	30	0.154414	1.02058	-0.421572	0.374369	10	-10	-0.00492	-0.06
LDR_UNBIAS	0	30	0.0909452	0.672131	-0.637741	0.305057	10	-10	0	
LDR_UNBIAS	3	30	0.0130584	0.684107	-0.380812	0.221752	10	-10	-0.13978	5.99
LDR_UNBIAS	10	30	0.00124594	0.512596	-0.365663	0.233311	10	-10	-0.15922	3.26
LDR_UNBIAS	30	30	-0.0306332	0.679716	-0.55929	0.294079	10	-10	-0.17076	1.42
LDR_UNBIAS	50	30	-0.0142368	1.06012	-0.687084	0.416098	10	-10	-0.15574	0.28
LDR_UNBIAS	80	30	0.00055115	0.880412	-1.03816	0.405918	10	-10	-0.12109	0.09
LDR_UNBIAS	100	30	0.155971	0.816385	-0.458957	0.345701	10	-10	0.09549	-0.05
HDR_BIASED	0	31	-0.00684459	0.208846	-0.234834	0.096841	10	-10	0	
HDR_BIASED	3	31	-0.00694131	0.517918	-0.255532	0.139431	10	-10	-0.01229	
HDR_BIASED	10	31	0.0270396	0.436835	-0.247642	0.138927	10	-10	0.0172	
HDR_BIASED	30	31	0.0437305	0.353296	-0.186734	0.131368	10	-10	0.00298	
HDR_BIASED	50	31	0.0701231	0.409809	-0.313982	0.172299	10	-10	0.05599	
HDR_BIASED	80	31	0.0486268	0.51002	-0.304674	0.220565	10	-10	0.07125	
HDR_BIASED	100	31	0.0719901	0.662361	-0.416655	0.261568	10	-10	0.08057	
HDR_UNBIAS	0	30	-0.0130833	0.149317	-0.186677	0.0848318	10	-10	0	
HDR_UNBIAS	3	30	-0.027885	0.225455	-0.272127	0.115869	10	-10	-0.02334	
HDR_UNBIAS	10	30	-0.0583384	0.157204	-0.345814	0.128302	10	-10	-0.04887	
HDR_UNBIAS	30	30	-0.177552	0.492673	-0.610576	0.246467	10	-10	-0.12036	
HDR_UNBIAS	50	30	-0.643299	0.088427	-1.33466	0.377096	10	-10	-0.56416	
HDR_UNBIAS	80	30	-1.59593	-0.727955	-2.55283	0.584085	10	-10	-1.42134	
HDR_UNBIAS	100	30	-2.19356	-0.980954	-3.54115	0.817378	10	-10	-1.93515	

Plot of the average readings for each radiation/bias condition

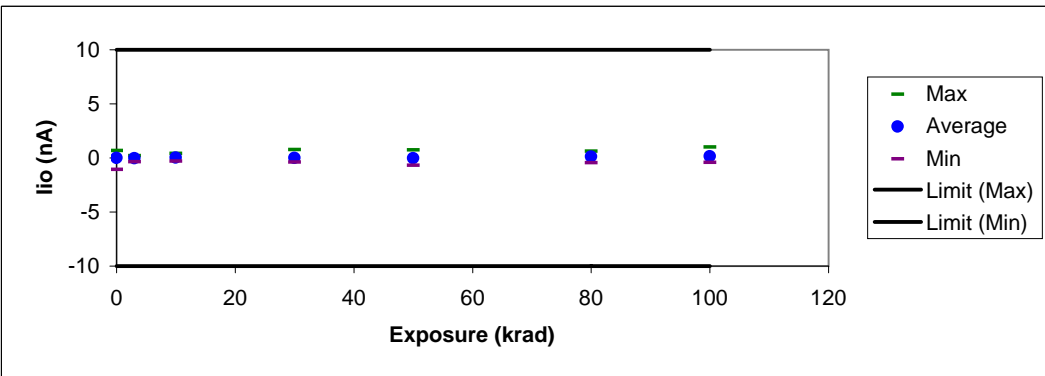


TEST ID: 2004 Input Offset Current;  $i_{io}$

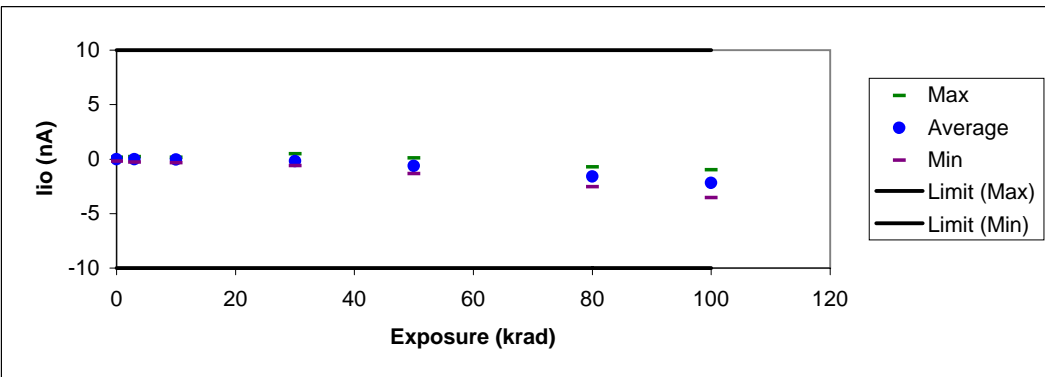
Low dose rate unbiased



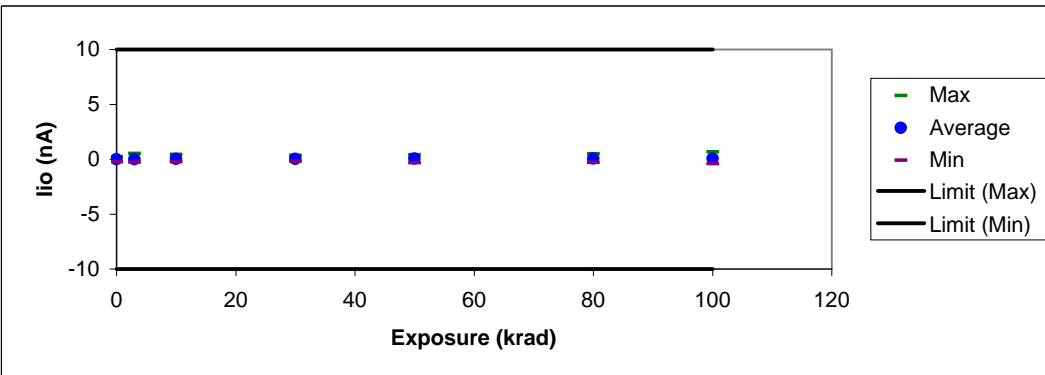
Low dose rate biased



High dose rate unbiased



High dose rate biased



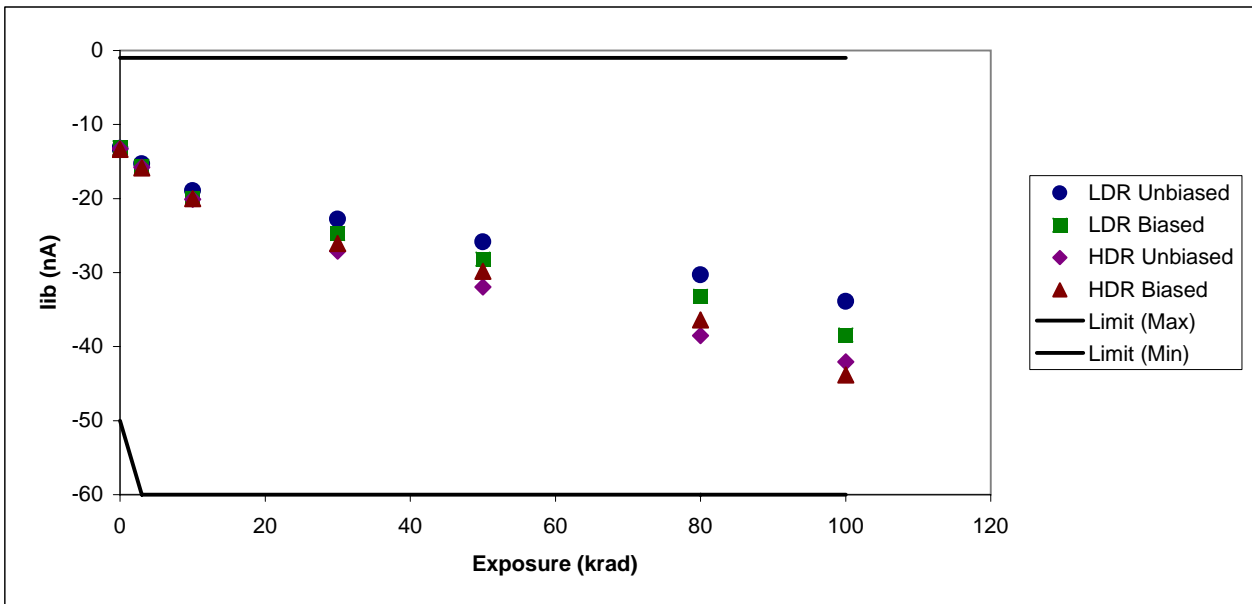
**TEST ID: 1005 +Input Bias Current; +lib**

+Vcc=5V, Vo=1.4V (nA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

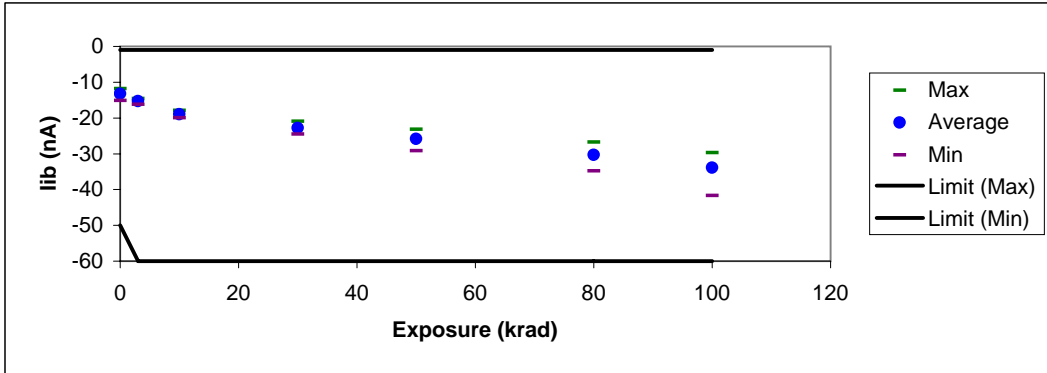
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-13.1324	-11.6659	-14.9539	0.930833	-1	-50	0	
LDR_BIAS	3	30	-15.6466	-14.617	-16.5409	0.532569	-1	-60	-2.48561	1.03
LDR_BIAS	10	30	-20.0349	-18.8033	-21.2561	0.817737	-1	-60	-7.40036	1.19
LDR_BIAS	30	30	-24.727	-22.317	-26.4182	1.29702	-1	-60	-12.359	1.05
LDR_BIAS	50	30	-28.2053	-25.5894	-30.4267	1.69872	-1	-60	-15.7072	1.03
LDR_BIAS	80	30	-33.2111	-29.3483	-37.0154	2.01203	-1	-60	-20.5453	0.88
LDR_BIAS	100	30	-38.4505	-33.1837	-50.8678	4.01592	-1	-60	-25.1597	0.84
LDR_UNBIAS	0	30	-13.2218	-11.8319	-15.1242	0.871874	-1	-50	0	
LDR_UNBIAS	3	30	-15.2974	-14.5608	-16.2063	0.460662	-1	-60	-1.98389	0.82
LDR_UNBIAS	10	30	-18.9338	-17.8572	-19.9032	0.673605	-1	-60	-5.65654	0.84
LDR_UNBIAS	30	30	-22.7625	-20.9391	-24.4968	1.20987	-1	-60	-9.72389	0.72
LDR_UNBIAS	50	30	-25.8563	-23.1727	-29.1422	1.77527	-1	-60	-12.8425	0.71
LDR_UNBIAS	80	30	-30.3089	-26.7448	-34.7912	2.30089	-1	-60	-17.6052	0.72
LDR_UNBIAS	100	30	-33.9023	-29.6836	-41.678	3.1602	-1	-60	-20.8263	0.74
HDR_BIAS	0	31	-13.3649	-11.9007	-14.5364	0.846323	-1	-50	0	
HDR_BIAS	3	31	-15.8783	-15.0535	-16.7243	0.467333	-1	-60	-2.40815	
HDR_BIAS	10	31	-20.0286	-19.0705	-21.0201	0.525188	-1	-60	-6.22302	
HDR_BIAS	30	31	-26.0793	-24.1793	-28.064	1.25551	-1	-60	-11.7903	
HDR_BIAS	50	31	-29.8281	-27.6528	-32.3637	1.51241	-1	-60	-15.3005	
HDR_BIAS	80	31	-36.3879	-32.7147	-44.4157	2.70978	-1	-60	-23.4688	
HDR_BIAS	100	31	-43.8265	-35.5521	-65.7907	7.56368	-1	-60	-29.9184	
HDR_UNBIAS	0	30	-13.2538	-12.0301	-14.4844	0.730214	-1	-50	0	
HDR_UNBIAS	3	30	-15.7729	-14.9942	-16.62	0.467802	-1	-60	-2.42138	
HDR_UNBIAS	10	30	-20.1015	-18.484	-21.4847	0.784795	-1	-60	-6.7	
HDR_UNBIAS	30	30	-27.1161	-23.9195	-30.8832	1.83117	-1	-60	-13.4298	
HDR_UNBIAS	50	30	-31.9559	-27.5656	-36.6961	2.54409	-1	-60	-18.1459	
HDR_UNBIAS	80	30	-38.5118	-32.4743	-44.3369	3.39776	-1	-60	-24.5464	
HDR_UNBIAS	100	30	-42.0522	-35.0098	-48.6978	3.93936	-1	-60	-28.0441	

Plot of the average readings for each radiation/bias condition

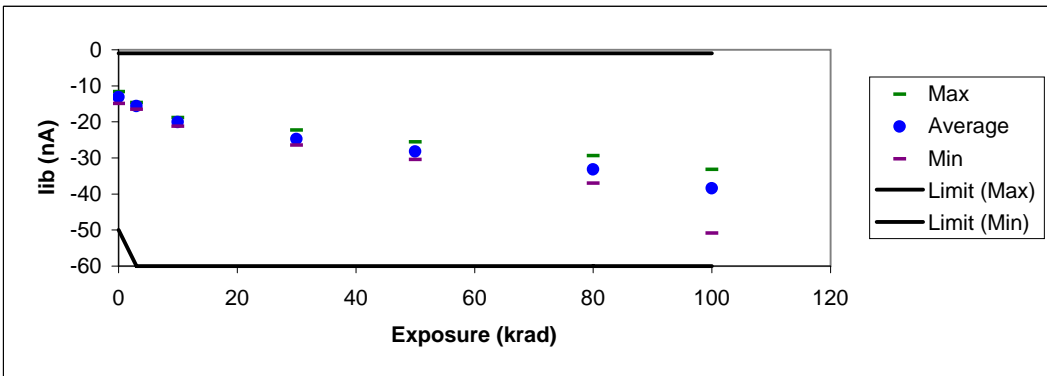


TEST ID: 1005 +Input Bias Current; +lib

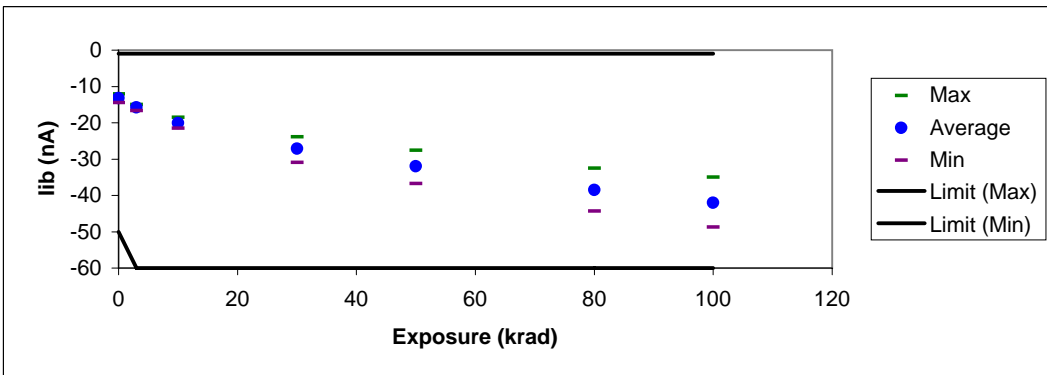
Low dose rate unbiased



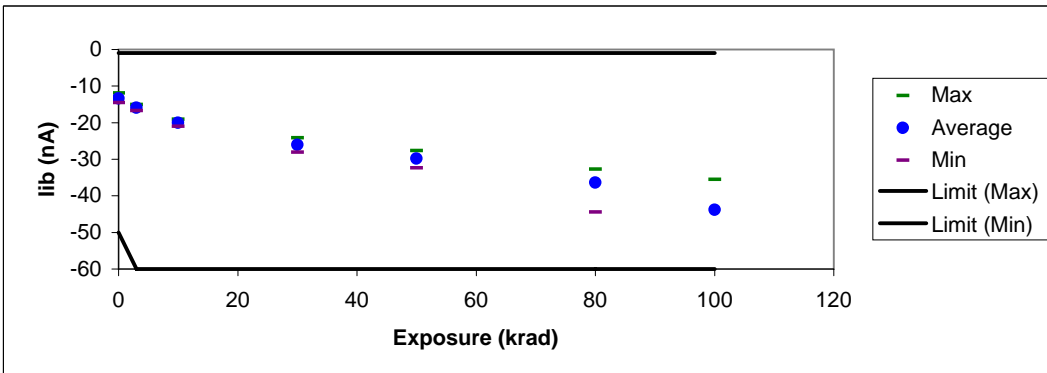
Low dose rate biased



High dose rate unbiased



High dose rate biased



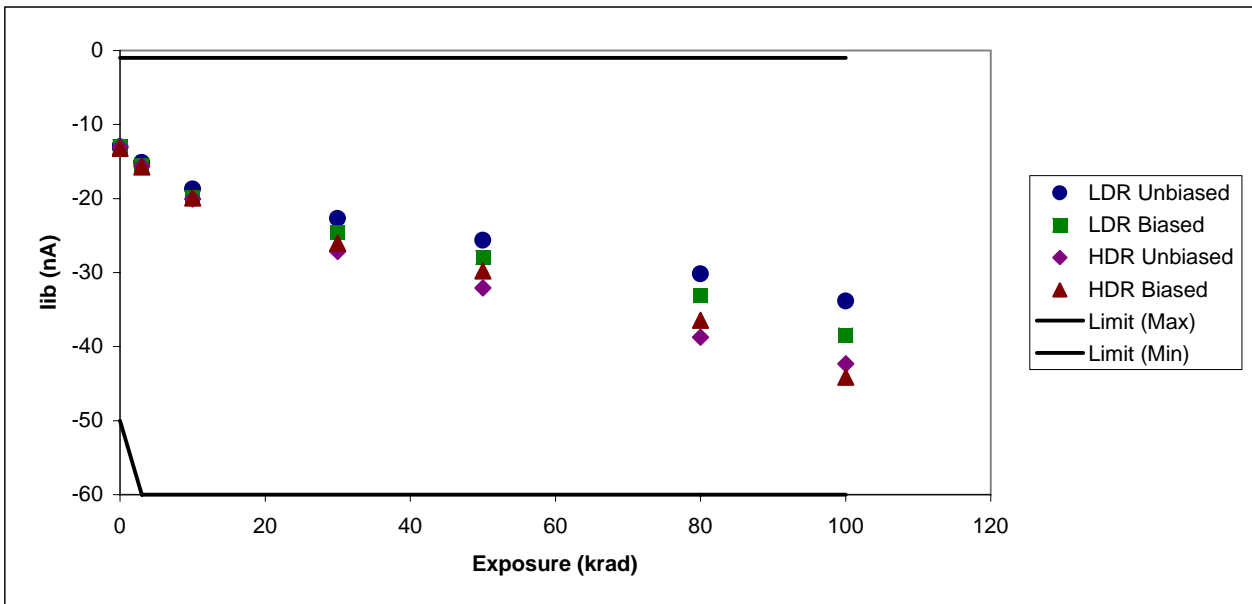
**TEST ID: 2005 +Input Bias Current; +lib**

+Vcc=5V, Vo=1.4V (nA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

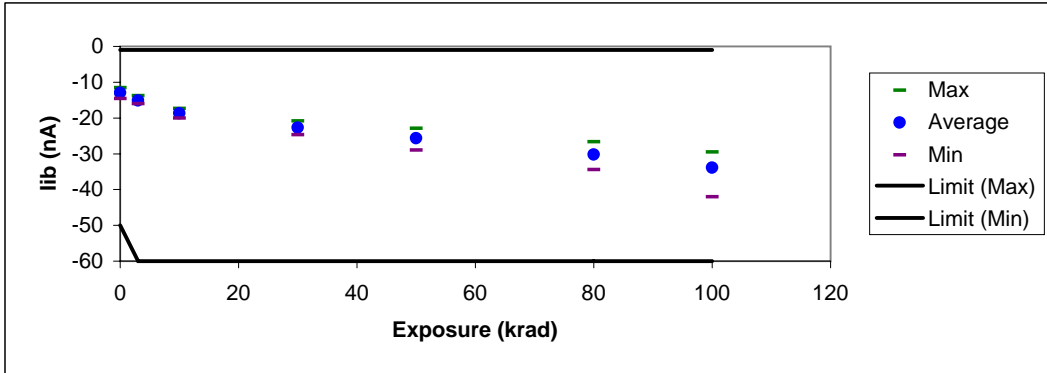
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-12.9673	-11.5741	-14.441	0.77575	-1	-50	0	
LDR_BIAS	3	30	-15.4718	-14.6959	-16.3494	0.520233	-1	-60	-2.62903	1.08
LDR_BIAS	10	30	-19.9006	-18.3124	-21.2371	0.813724	-1	-60	-7.05396	1.14
LDR_BIAS	30	30	-24.5944	-22.5523	-26.5564	1.31929	-1	-60	-12.0743	1.02
LDR_BIAS	50	30	-27.9747	-25.1631	-30.5948	1.77167	-1	-60	-15.1363	0.98
LDR_BIAS	80	30	-33.1067	-29.2331	-36.7584	2.00082	-1	-60	-20.6515	0.85
LDR_BIAS	100	30	-38.4414	-33.0134	-50.1661	3.8643	-1	-60	-25.2229	0.81
LDR_UNBIAS	0	30	-13.0095	-11.5569	-14.5491	0.833827	-1	-50	0	
LDR_UNBIAS	3	30	-15.1223	-13.8111	-15.9695	0.532172	-1	-60	-2.17215	0.90
LDR_UNBIAS	10	30	-18.7043	-17.3702	-20.0104	0.69884	-1	-60	-5.61049	0.83
LDR_UNBIAS	30	30	-22.7133	-20.8617	-24.6499	1.26274	-1	-60	-9.51272	0.70
LDR_UNBIAS	50	30	-25.6503	-22.8467	-29.0073	1.69859	-1	-60	-12.6938	0.69
LDR_UNBIAS	80	30	-30.191	-26.6429	-34.4055	2.34426	-1	-60	-17.5172	0.70
LDR_UNBIAS	100	30	-33.866	-29.4998	-42.0576	3.24414	-1	-60	-20.8716	0.73
HDR_BIAS	0	31	-13.2108	-11.6326	-14.4702	0.839084	-1	-50	0	
HDR_BIAS	3	31	-15.7371	-14.7754	-16.6269	0.477137	-1	-60	-2.42341	
HDR_BIAS	10	31	-19.9151	-18.8768	-20.9867	0.55565	-1	-60	-6.20154	
HDR_BIAS	30	31	-26.0132	-24.0528	-28.2245	1.28547	-1	-60	-11.8434	
HDR_BIAS	50	31	-29.7703	-27.4624	-32.4999	1.55116	-1	-60	-15.4858	
HDR_BIAS	80	31	-36.4586	-32.0513	-43.0603	2.68323	-1	-60	-24.3732	
HDR_BIAS	100	31	-44.1141	-34.9233	-62.6775	7.62941	-1	-60	-31.0714	
HDR_UNBIAS	0	30	-13.112	-11.8854	-14.5163	0.751447	-1	-50	0	
HDR_UNBIAS	3	30	-15.6599	-14.786	-16.434	0.436712	-1	-60	-2.41036	
HDR_UNBIAS	10	30	-20.065	-18.9181	-21.3014	0.676472	-1	-60	-6.79149	
HDR_UNBIAS	30	30	-27.1587	-24.7173	-30.8162	1.70232	-1	-60	-13.6331	
HDR_UNBIAS	50	30	-32.0694	-28.2442	-36.8321	2.46883	-1	-60	-18.5241	
HDR_UNBIAS	80	30	-38.7291	-33.369	-44.826	3.33005	-1	-60	-24.9209	
HDR_UNBIAS	100	30	-42.3218	-36.1743	-49.2573	3.88894	-1	-60	-28.5183	

Plot of the average readings for each radiation/bias condition

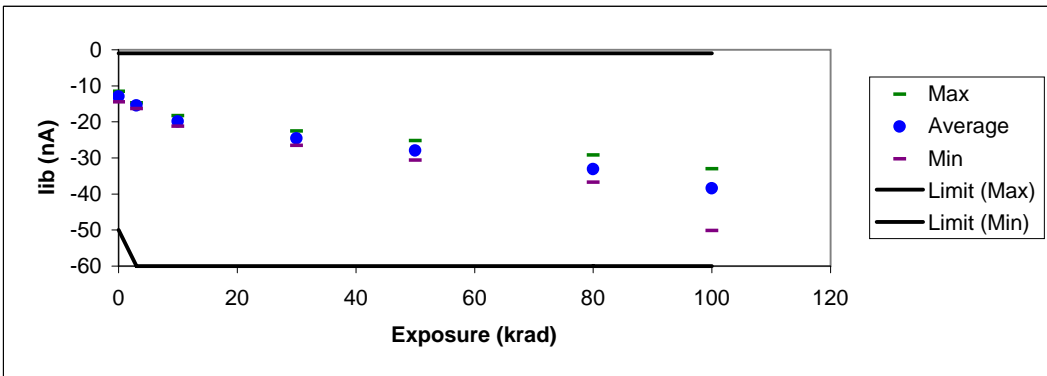


TEST ID: 2005 +Input Bias Current; +lib

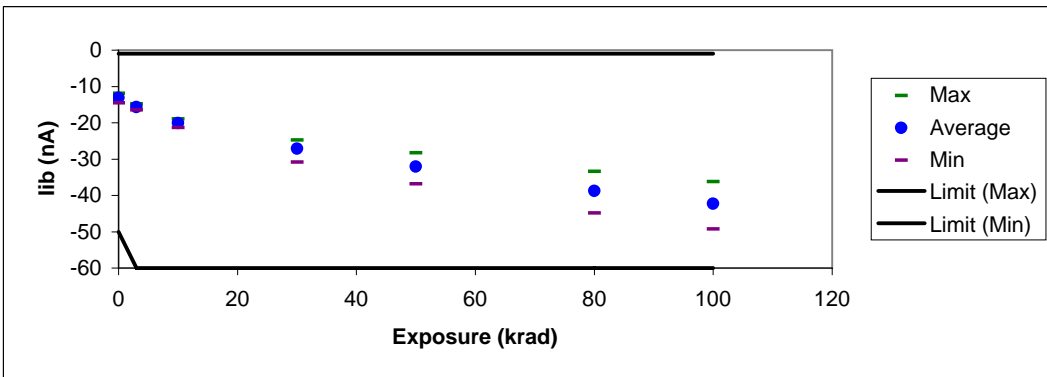
Low dose rate unbiased



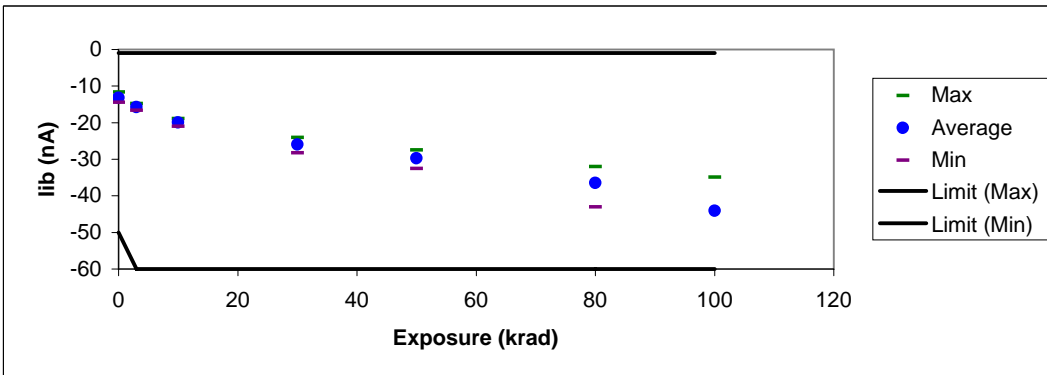
Low dose rate biased



High dose rate unbiased



High dose rate biased



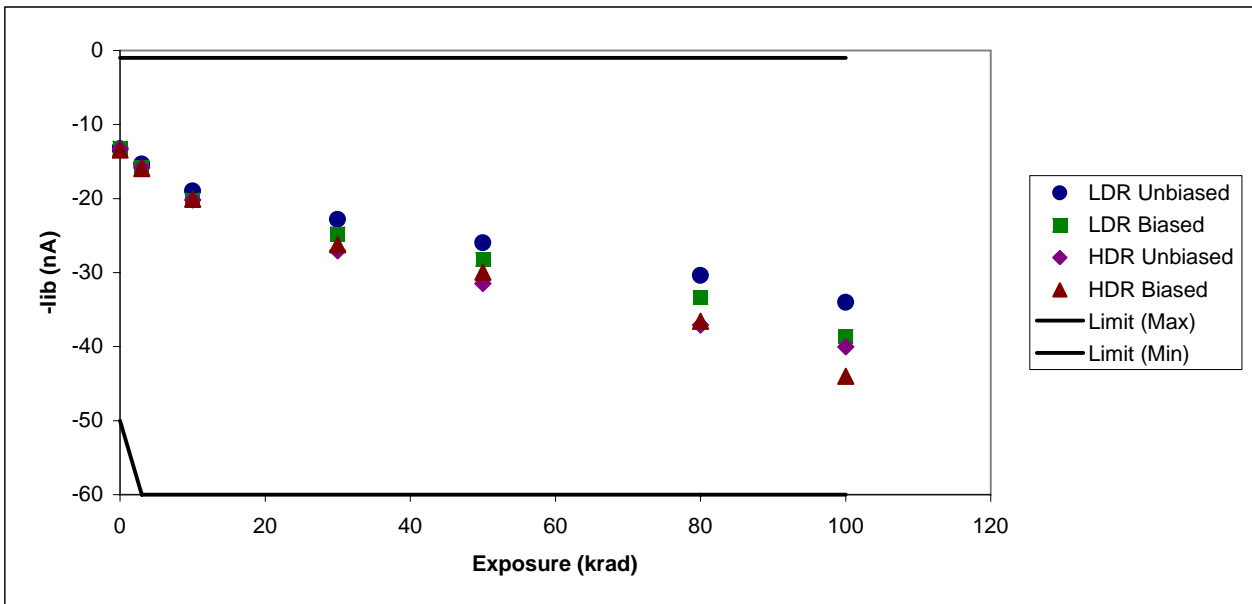
**TEST ID: 1006 -Input Bias Current; -lib**

+Vcc=5V, Vo=1.4V (nA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

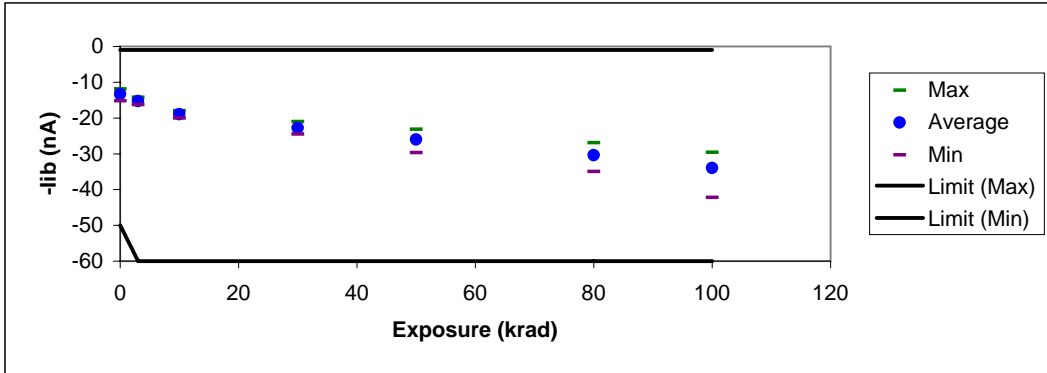
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-13.1678	-11.6615	-14.9636	0.940789	-1	-50	0	
LDR_BIAS	3	30	-15.7344	-14.6194	-16.5971	0.515054	-1	-60	-2.56617	1.06
LDR_BIAS	10	30	-20.1763	-18.9596	-21.4197	0.784216	-1	-60	-7.29894	1.17
LDR_BIAS	30	30	-24.7525	-22.2364	-26.6136	1.30691	-1	-60	-12.2194	1.03
LDR_BIAS	50	30	-28.207	-25.4355	-30.4267	1.72285	-1	-60	-15.6293	1.02
LDR_BIAS	80	30	-33.3528	-29.4259	-37.778	2.14561	-1	-60	-20.5533	0.87
LDR_BIAS	100	30	-38.662	-33.3327	-51.4945	4.02669	-1	-60	-25.8917	0.87
LDR_UNBIAS	0	30	-13.2821	-11.8831	-15.1682	0.891493	-1	-50	0	
LDR_UNBIAS	3	30	-15.3329	-14.1908	-16.2845	0.544712	-1	-60	-2.05456	0.85
LDR_UNBIAS	10	30	-18.9952	-17.9427	-20.0204	0.606898	-1	-60	-5.36312	0.80
LDR_UNBIAS	30	30	-22.8106	-20.9953	-24.5383	1.20658	-1	-60	-9.40831	0.69
LDR_UNBIAS	50	30	-25.9803	-23.1727	-29.6511	1.76617	-1	-60	-12.9621	0.73
LDR_UNBIAS	80	30	-30.3794	-26.9103	-34.9841	2.36505	-1	-60	-17.8894	0.77
LDR_UNBIAS	100	30	-34.014	-29.5904	-42.2312	3.27453	-1	-60	-20.8543	0.79
HDR_BIAS	0	31	-13.4321	-11.8885	-14.572	0.836982	-1	-50	0	
HDR_BIAS	3	31	-15.9395	-15.1136	-16.7951	0.460414	-1	-60	-2.41547	
HDR_BIAS	10	31	-20.0955	-19.0998	-21.2931	0.524048	-1	-60	-6.24988	
HDR_BIAS	30	31	-26.2226	-24.1861	-28.3393	1.26364	-1	-60	-11.8342	
HDR_BIAS	50	31	-29.946	-27.6699	-32.5853	1.52122	-1	-60	-15.3781	
HDR_BIAS	80	31	-36.5543	-32.9828	-44.2643	2.66951	-1	-60	-23.6348	
HDR_BIAS	100	31	-43.9962	-36.0028	-65.8225	7.50504	-1	-60	-29.8891	
HDR_UNBIAS	0	30	-13.3283	-11.9623	-14.6573	0.730324	-1	-50	0	
HDR_UNBIAS	3	30	-15.8404	-14.8916	-16.9241	0.500679	-1	-60	-2.40943	
HDR_UNBIAS	10	30	-20.1897	-18.6696	-21.3651	0.754817	-1	-60	-6.74202	
HDR_UNBIAS	30	30	-27.0744	-23.8243	-29.9863	1.63499	-1	-60	-13.5565	
HDR_UNBIAS	50	30	-31.4581	-27.0418	-35.1533	2.22315	-1	-60	-17.7185	
HDR_UNBIAS	80	30	-37.0755	-31.7435	-41.5467	2.74796	-1	-60	-23.3363	
HDR_UNBIAS	100	30	-40.0193	-34.2754	-45.042	3.06265	-1	-60	-26.4173	

Plot of the average readings for each radiation/bias condition

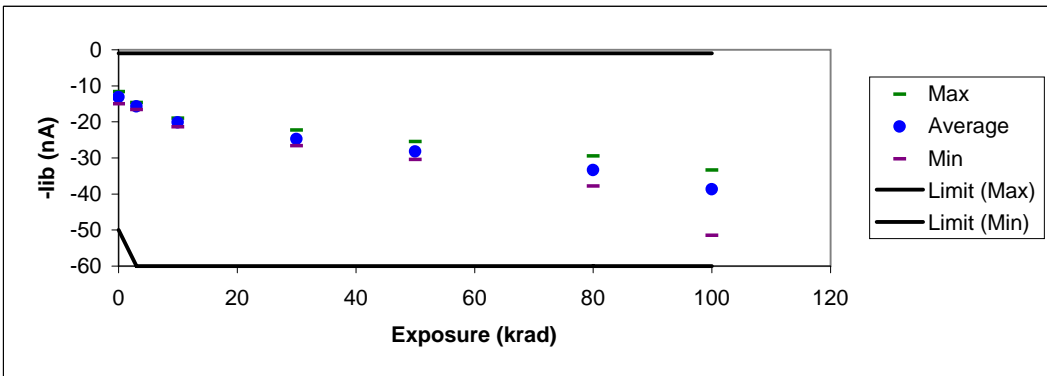


TEST ID: 1006 -Input Bias Current; -lib

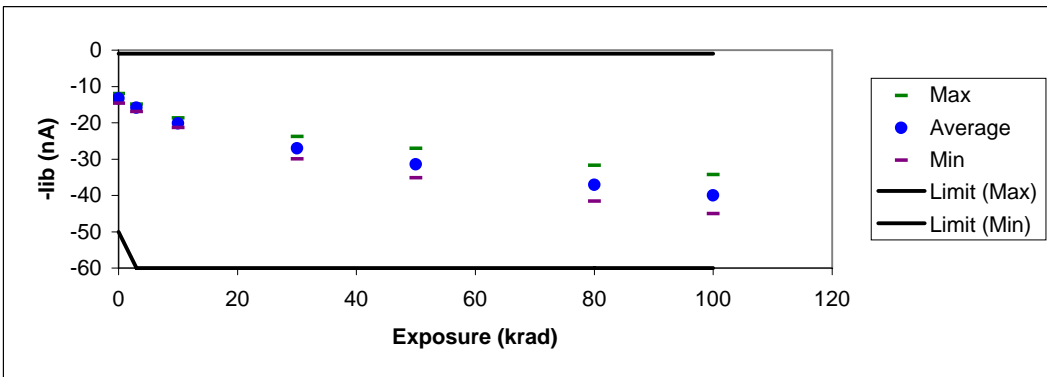
Low dose rate unbiased



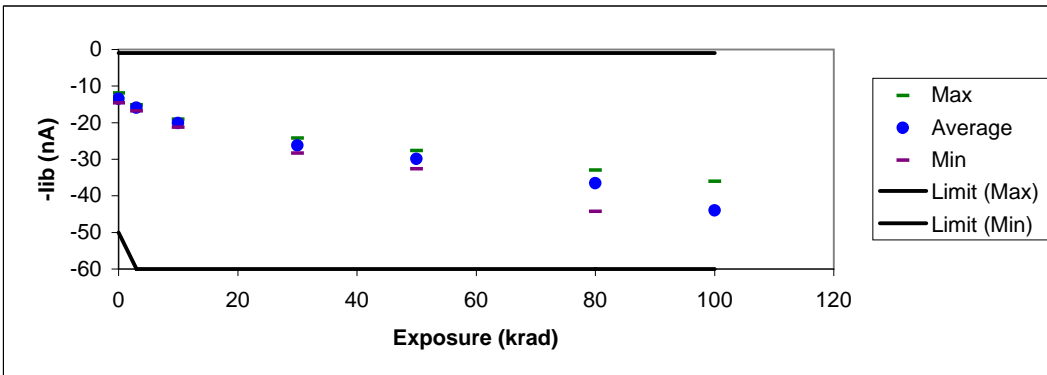
Low dose rate biased



High dose rate unbiased



High dose rate biased



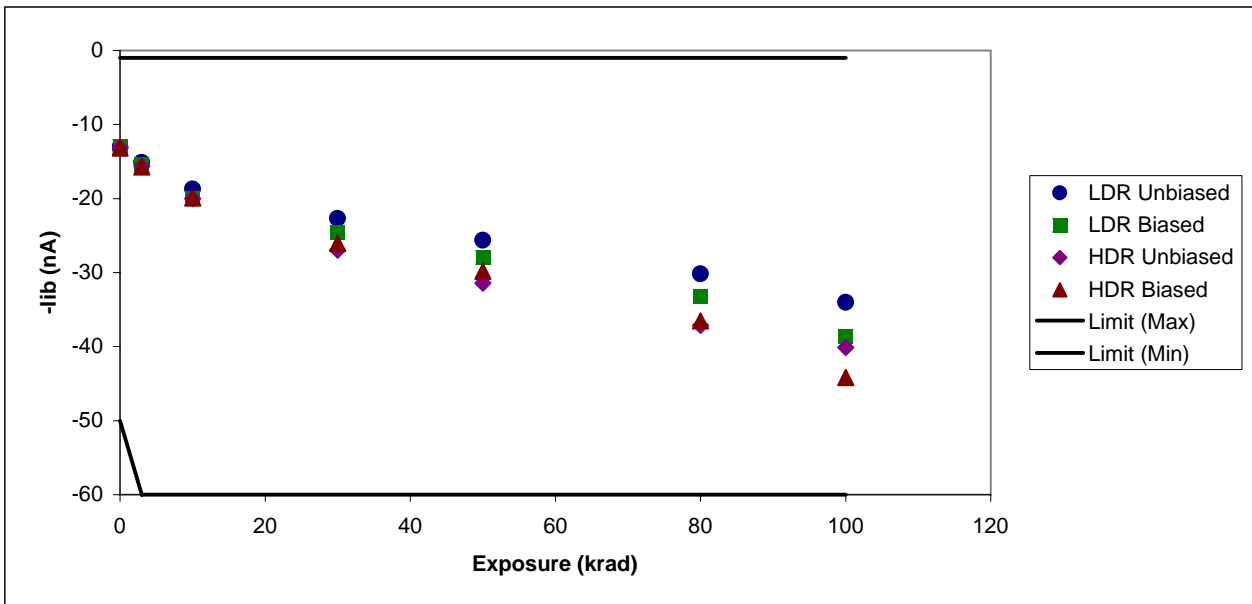
**TEST ID: 2006 -Input Bias Current; -lib**

+Vcc=5V, Vo=1.4V (nA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

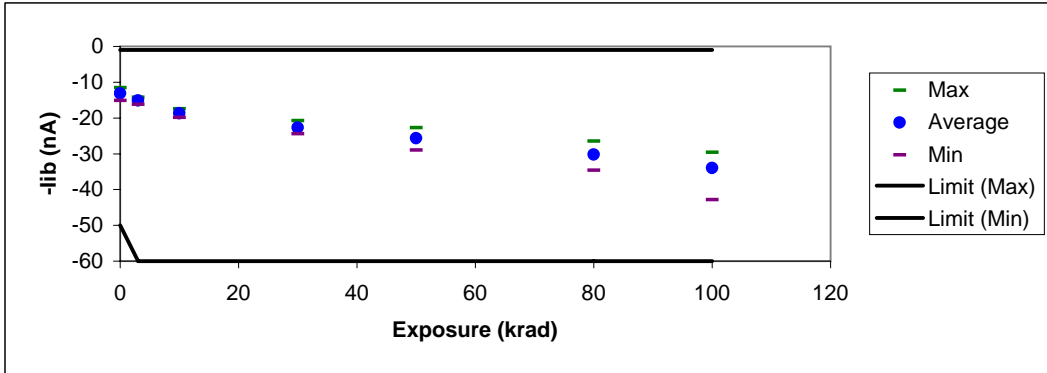
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-12.9532	-11.5373	-14.7574	0.950604	-1	-50	0	
LDR_BIAS	3	30	-15.4422	-14.5491	-16.4084	0.565497	-1	-60	-2.53769	1.06
LDR_BIAS	10	30	-19.918	-18.3296	-21.161	0.852366	-1	-60	-7.21126	1.13
LDR_BIAS	30	30	-24.5886	-22.2378	-26.576	1.27529	-1	-60	-12.1957	1.02
LDR_BIAS	50	30	-27.9569	-24.7305	-30.1289	1.70342	-1	-60	-15.4758	1.00
LDR_BIAS	80	30	-33.2358	-29.4881	-36.9003	2.07727	-1	-60	-20.8331	0.84
LDR_BIAS	100	30	-38.5958	-33.3567	-50.6589	3.99332	-1	-60	-25.4438	0.82
LDR_UNBIAS	0	30	-13.1005	-11.5127	-15.0989	0.881485	-1	-50	0	
LDR_UNBIAS	3	30	-15.1354	-14.2012	-16.229	0.536938	-1	-60	-2.0687	0.84
LDR_UNBIAS	10	30	-18.7056	-17.4071	-19.8826	0.711475	-1	-60	-5.31463	0.79
LDR_UNBIAS	30	30	-22.6827	-20.7461	-24.3949	1.20257	-1	-60	-9.72745	0.71
LDR_UNBIAS	50	30	-25.6361	-22.7091	-28.9705	1.7165	-1	-60	-12.7672	0.70
LDR_UNBIAS	80	30	-30.1915	-26.4685	-34.6187	2.32484	-1	-60	-17.4536	0.74
LDR_UNBIAS	100	30	-34.0219	-29.5924	-42.874	3.41195	-1	-60	-20.761	0.78
HDR_BIAS	0	31	-13.2039	-11.6891	-14.3533	0.818139	-1	-50	0	
HDR_BIAS	3	31	-15.7302	-14.9169	-16.5163	0.445073	-1	-60	-2.40427	
HDR_BIAS	10	31	-19.9421	-18.9063	-21.1533	0.549909	-1	-60	-6.36318	
HDR_BIAS	30	31	-26.057	-24.0356	-28.1656	1.29451	-1	-60	-11.9485	
HDR_BIAS	50	31	-29.8404	-27.6683	-32.4507	1.57351	-1	-60	-15.4736	
HDR_BIAS	80	31	-36.5072	-32.3161	-42.8574	2.69305	-1	-60	-24.7259	
HDR_BIAS	100	31	-44.1861	-35.1813	-62.8908	7.64247	-1	-60	-31.1402	
HDR_UNBIAS	0	30	-13.0989	-11.7675	-14.3375	0.73064	-1	-50	0	
HDR_UNBIAS	3	30	-15.632	-14.6804	-16.4684	0.465986	-1	-60	-2.47028	
HDR_UNBIAS	10	30	-20.0066	-18.9868	-21.3014	0.682731	-1	-60	-6.73131	
HDR_UNBIAS	30	30	-26.9811	-24.6466	-30.4242	1.62155	-1	-60	-13.7013	
HDR_UNBIAS	50	30	-31.4261	-27.9888	-35.4974	2.1813	-1	-60	-18.1942	
HDR_UNBIAS	80	30	-37.1332	-32.6411	-42.2732	2.78691	-1	-60	-23.6933	
HDR_UNBIAS	100	30	-40.1283	-35.0834	-45.7161	3.10679	-1	-60	-26.6983	

Plot of the average readings for each radiation/bias condition

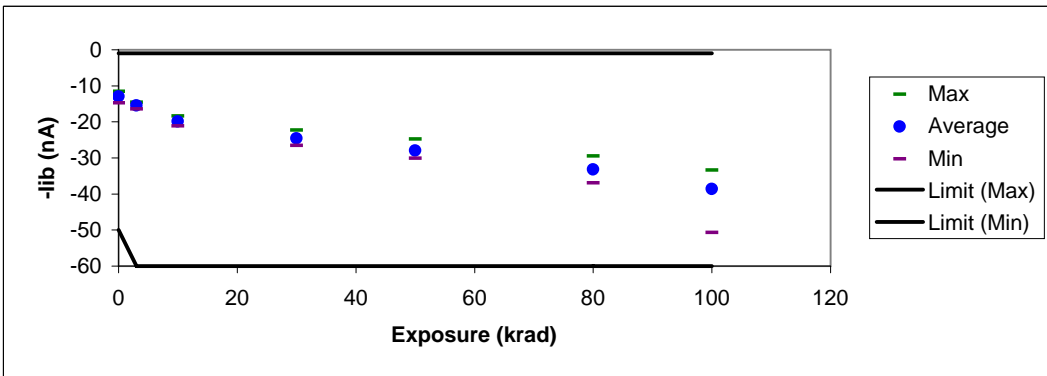


TEST ID: 2006 -Input Bias Current; -lib

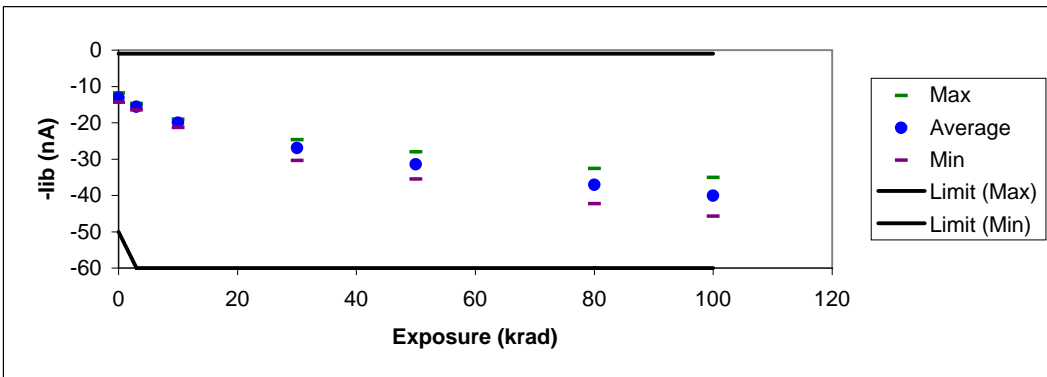
Low dose rate unbiased



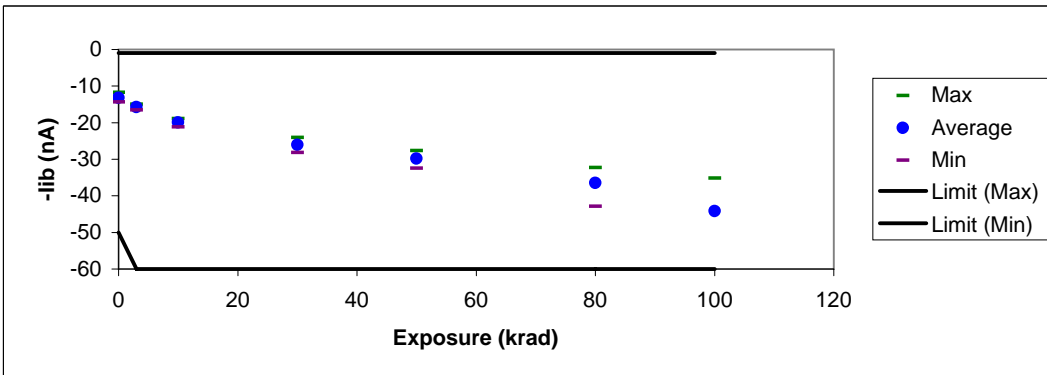
Low dose rate biased



High dose rate unbiased



High dose rate biased



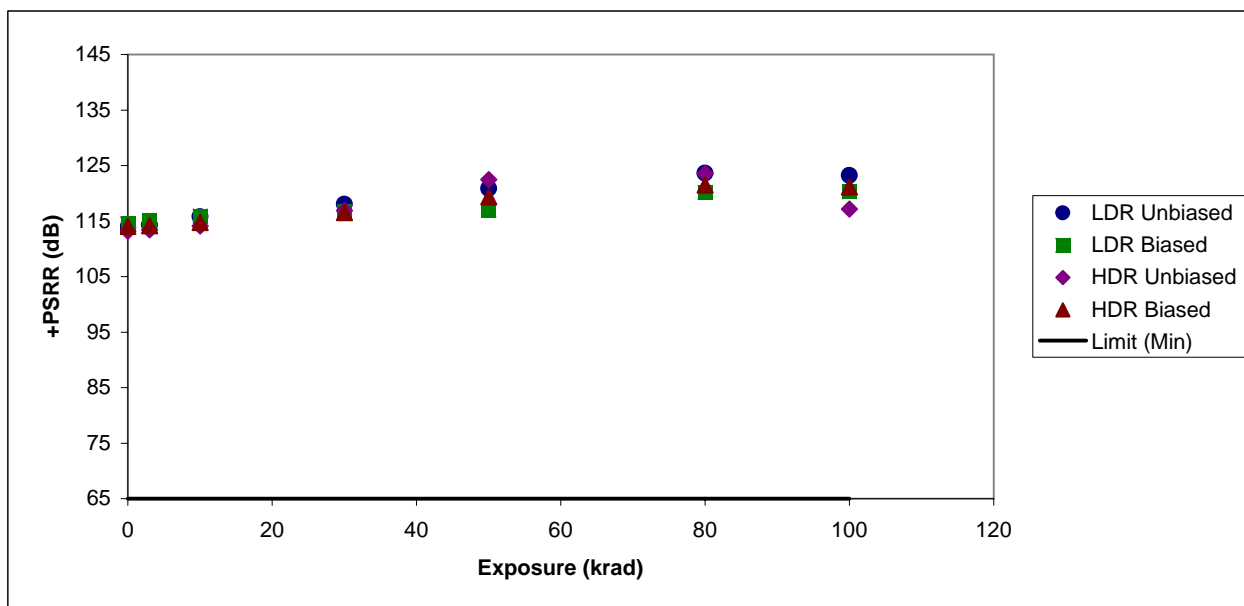
**TEST ID: 1007 +PSRR**

+Vcc=5V to 30V, Vo=1.4V (dB)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

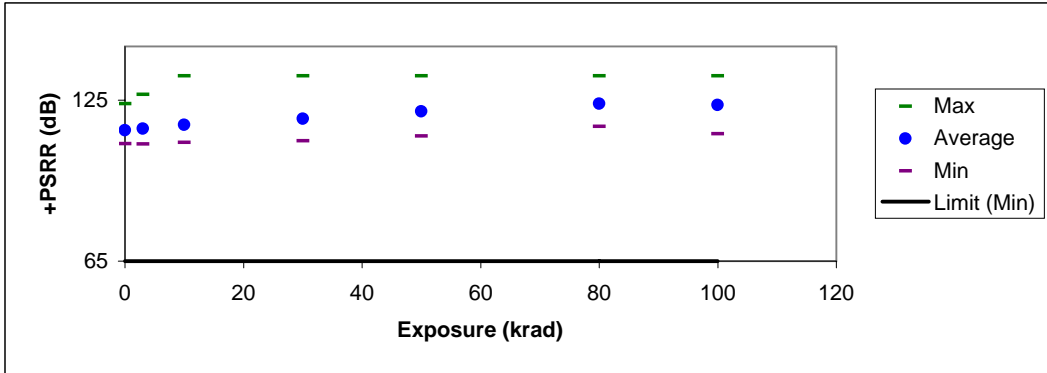
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	114.532	131.753	108.002	4.43179	N/A	65	0	
LDR_BIAS	3	30	115.061	133.979	108.299	4.74897	N/A	65	0.44955	3.97
LDR_BIAS	10	30	115.876	133.979	108.809	4.89887	N/A	65	1.03177	1.50
LDR_BIAS	30	30	116.679	133.979	108.473	5.12671	N/A	65	1.96539	0.96
LDR_BIAS	50	30	116.941	127.845	112.124	3.6644	N/A	65	2.02323	0.49
LDR_BIAS	80	30	120.135	133.979	112.425	5.78534	N/A	65	5.44756	0.94
LDR_BIAS	100	30	120.284	133.979	110.031	6.89191	N/A	65	4.94633	0.82
LDR_UNBIAS	0	30	113.773	123.666	108.808	3.6058	N/A	65	0	
LDR_UNBIAS	3	30	114.302	127.125	108.694	3.93801	N/A	65	0.46753	2.49
LDR_UNBIAS	10	30	115.765	133.979	109.21	5.10607	N/A	65	1.32129	1.58
LDR_UNBIAS	30	30	118.054	133.979	109.82	6.21127	N/A	65	3.12609	1.18
LDR_UNBIAS	50	30	120.846	133.979	111.583	7.08894	N/A	65	5.91386	0.86
LDR_UNBIAS	80	30	123.602	133.979	115.168	5.34675	N/A	65	10.6522	1.02
LDR_UNBIAS	100	30	123.204	133.979	112.436	7.73022	N/A	65	10.6181	4.58
HDR_BIAS	0	31	114.061	123.771	108.861	3.48682	N/A	65	0	
HDR_BIAS	3	31	114.175	121.683	108.804	3.24985	N/A	65	0.11321	
HDR_BIAS	10	31	114.726	122.939	109.193	3.42579	N/A	65	0.6881	
HDR_BIAS	30	31	116.552	127.56	110.11	4.65092	N/A	65	2.0569	
HDR_BIAS	50	31	119.356	133.979	110.71	6.66178	N/A	65	4.11569	
HDR_BIAS	80	31	121.483	133.979	108.876	8.19141	N/A	65	5.80124	
HDR_BIAS	100	31	121.138	133.979	105.109	9.85443	N/A	65	6.03513	
HDR_UNBIAS	0	30	113.175	119.552	108.022	3.05661	N/A	65	0	
HDR_UNBIAS	3	30	113.431	118.951	108.185	3.07476	N/A	65	0.18751	
HDR_UNBIAS	10	30	114.099	119.64	108.591	3.22183	N/A	65	0.83589	
HDR_UNBIAS	30	30	116.877	129.023	109.703	4.65522	N/A	65	2.65615	
HDR_UNBIAS	50	30	122.436	133.979	111.371	7.06067	N/A	65	6.89189	
HDR_UNBIAS	80	30	123.532	133.979	111.714	6.97706	N/A	65	10.456	
HDR_UNBIAS	100	30	117.157	131.344	107.502	6.16604	N/A	65	2.31942	

Plot of the average readings for each radiation/bias condition

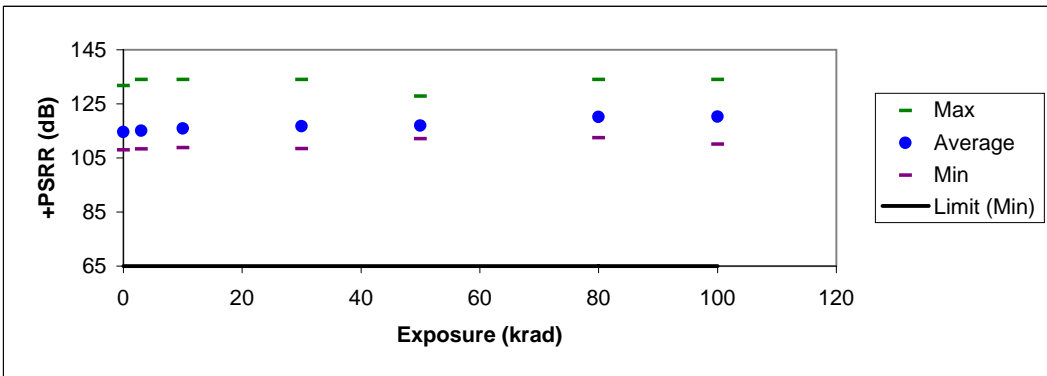


TEST ID: 1007 +PSRR

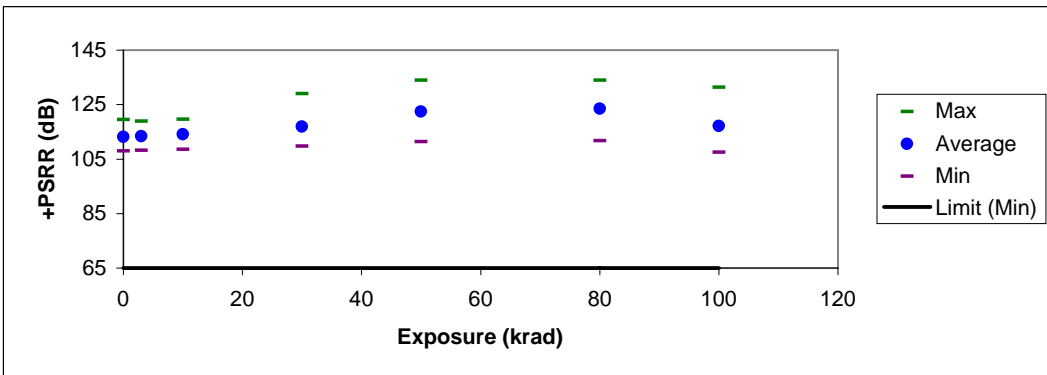
Low dose rate unbiased



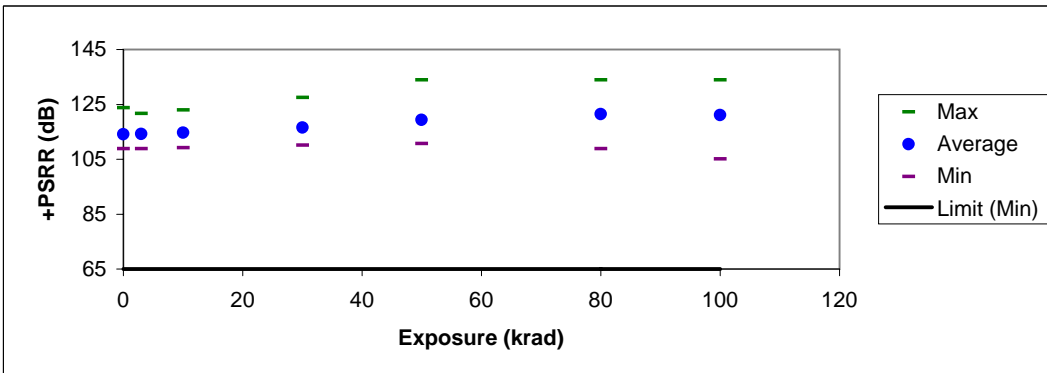
Low dose rate biased



High dose rate unbiased



High dose rate biased



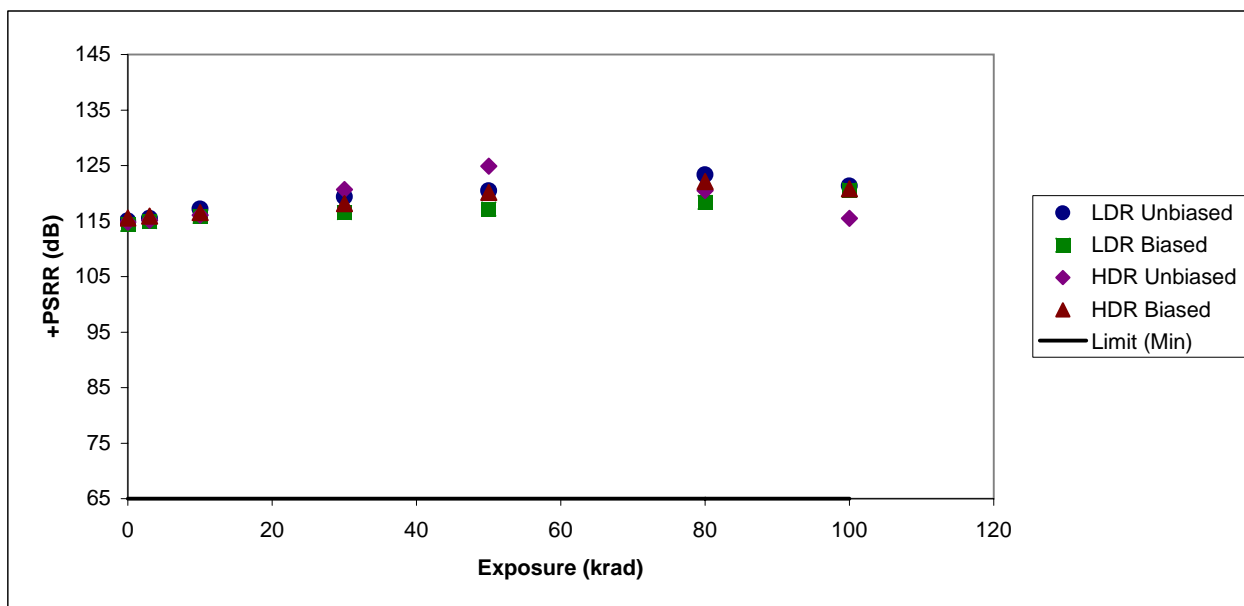
TEST ID: 2007 +PSRR

+Vcc=5V to 30V, Vo=1.4V (dB)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

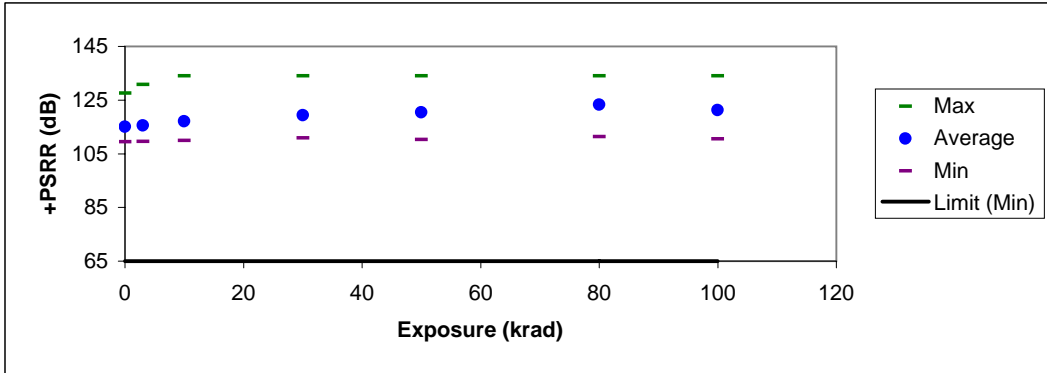
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	114.382	119.676	109.931	2.8098	N/A	65	0	
LDR_BIASED	3	30	114.898	120.398	110.361	2.93645	N/A	65	0.53622	1.89
LDR_BIASED	10	30	115.824	122.672	111.329	3.19094	N/A	65	1.26855	1.92
LDR_BIASED	30	30	116.511	123.497	111.197	3.2952	N/A	65	2.0637	0.86
LDR_BIASED	50	30	117.142	130.554	108.912	5.03006	N/A	65	3.44386	0.79
LDR_BIASED	80	30	118.352	131.475	109.336	5.27566	N/A	65	3.88892	0.63
LDR_BIASED	100	30	120.612	133.979	113.086	5.53448	N/A	65	4.89877	0.81
LDR_UNBIAS	0	30	115.042	127.602	109.503	4.72102	N/A	65	0	
LDR_UNBIAS	3	30	115.512	130.754	109.623	5.27288	N/A	65	0.29449	0.85
LDR_UNBIAS	10	30	117.143	133.979	109.895	6.38821	N/A	65	1.44896	1.26
LDR_UNBIAS	30	30	119.35	133.979	110.848	6.78644	N/A	65	3.05077	0.62
LDR_UNBIAS	50	30	120.454	133.979	110.272	7.65845	N/A	65	3.75153	0.41
LDR_UNBIAS	80	30	123.314	133.979	111.432	6.68189	N/A	65	9.49574	1.60
LDR_UNBIAS	100	30	121.285	133.979	110.597	8.13431	N/A	65	5.93357	-6.67
HDR_BIASED	0	31	115.575	133.979	108.937	5.2447	N/A	65	0	
HDR_BIASED	3	31	115.885	130.207	109.245	4.98446	N/A	65	0.28374	
HDR_BIASED	10	31	116.543	131.79	109.469	5.39693	N/A	65	0.66219	
HDR_BIASED	30	31	118.123	133.979	109.744	5.79005	N/A	65	2.40472	
HDR_BIASED	50	31	120.132	133.979	110.823	5.82239	N/A	65	4.36734	
HDR_BIASED	80	31	122.091	133.979	112.206	6.6973	N/A	65	6.14769	
HDR_BIASED	100	31	120.776	133.979	110.131	7.77488	N/A	65	6.04755	
HDR_UNBIAS	0	30	114.814	124.346	109.322	3.40008	N/A	65	0	
HDR_UNBIAS	3	30	115.165	126.28	109.739	3.54037	N/A	65	0.34714	
HDR_UNBIAS	10	30	116.073	126.747	110.491	3.83895	N/A	65	1.15366	
HDR_UNBIAS	30	30	120.704	133.979	111.052	7.02114	N/A	65	4.9019	
HDR_UNBIAS	50	30	124.866	133.979	113.707	6.63088	N/A	65	9.10969	
HDR_UNBIAS	80	30	120.505	133.979	109.75	6.38248	N/A	65	5.93892	
HDR_UNBIAS	100	30	115.493	133.585	106.556	6.72618	N/A	65	-0.88937	

Plot of the average readings for each radiation/bias condition

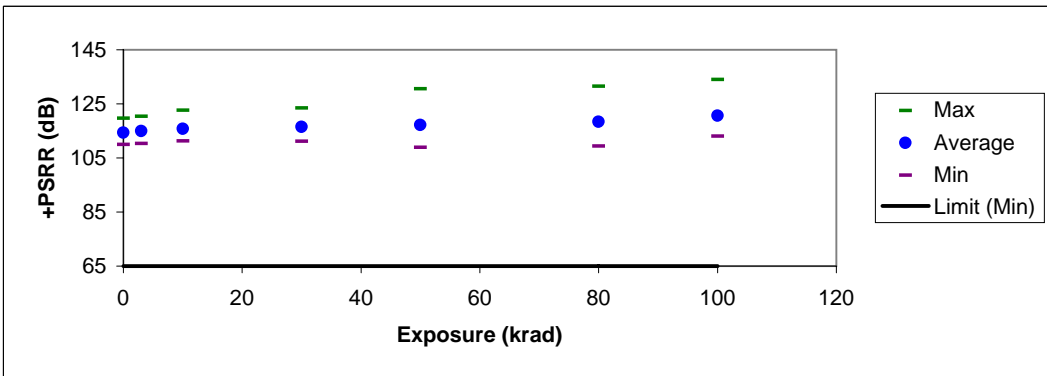


TEST ID: 2007 +PSRR

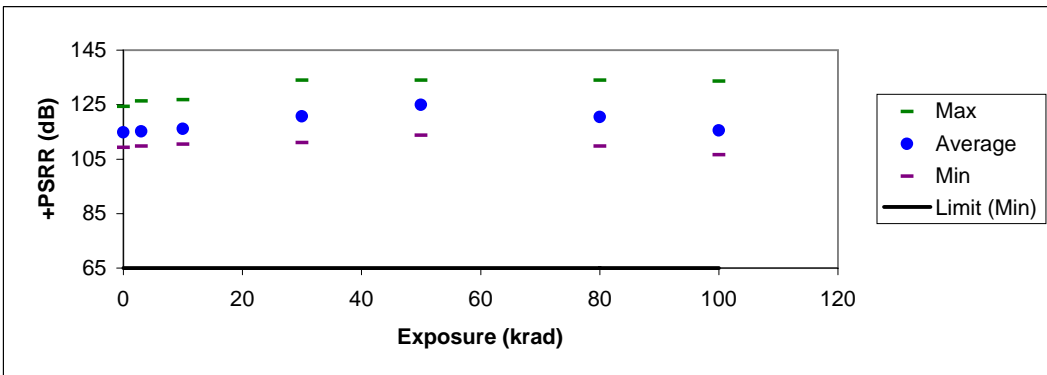
Low dose rate unbiased



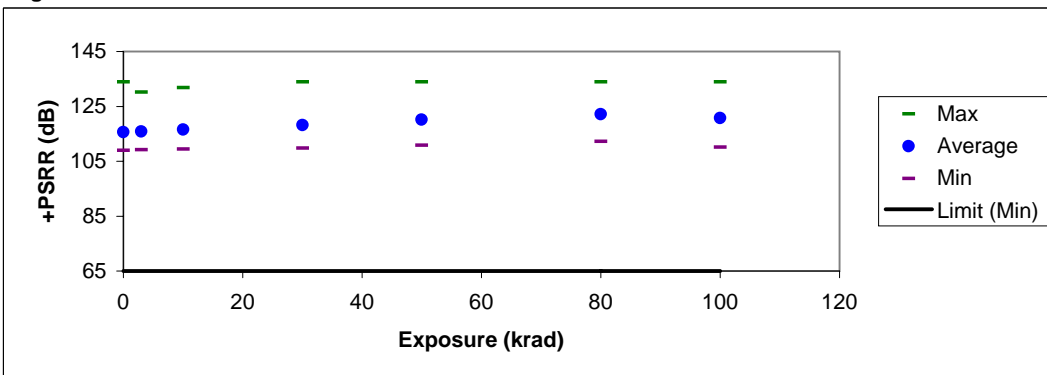
Low dose rate biased



High dose rate unbiased



High dose rate biased



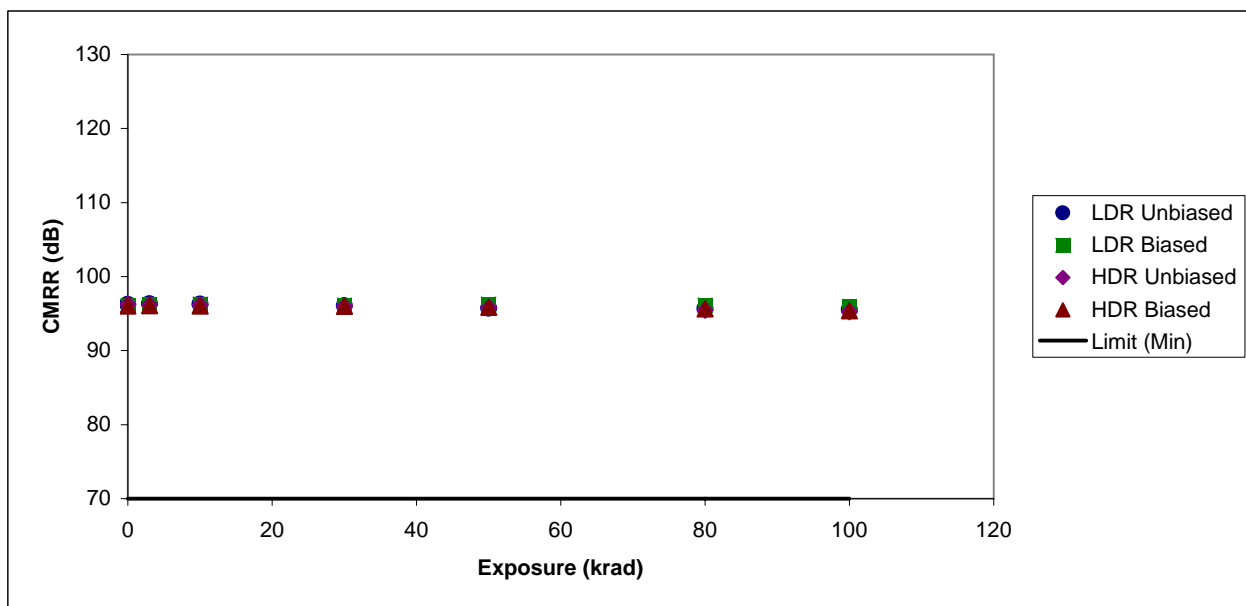
**TEST ID: 1008 CMRR**

Vcc=30V, Vin=0V to 28.5V, Vo=1.4V (dB)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

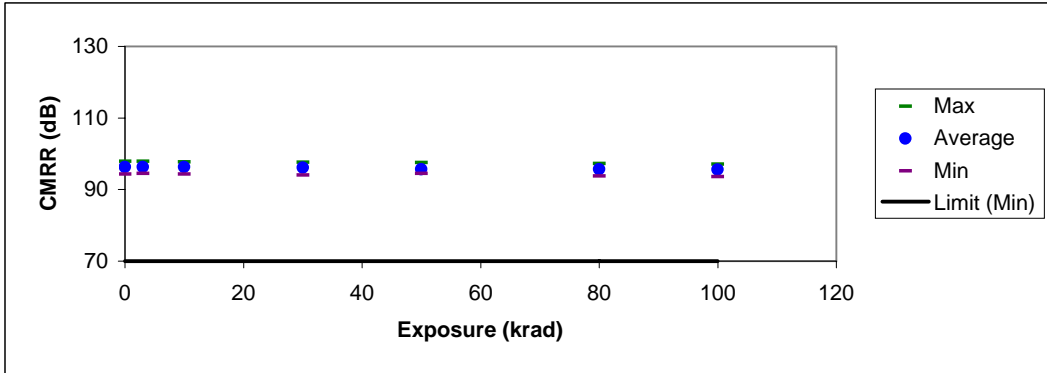
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	96.0483	97.4806	94.1051	0.795649	N/A	70	0	
LDR_BIASED	3	30	96.2193	97.8601	94.2891	0.831508	N/A	70	0.1539	3.08
LDR_BIASED	10	30	96.2699	97.935	94.3852	0.819391	N/A	70	0.23328	-25.83
LDR_BIASED	30	30	96.169	97.9355	94.2473	0.848897	N/A	70	0.12654	-5.03
LDR_BIASED	50	30	96.2888	98.0298	94.9456	0.718067	N/A	70	0.36133	-2.29
LDR_BIASED	80	30	96.1484	97.8853	93.9976	0.897658	N/A	70	0.06091	-0.15
LDR_BIASED	100	30	95.9707	97.8029	93.8034	0.94278	N/A	70	-0.02278	0.04
LDR_UNBIAS	0	30	96.2534	97.8974	94.3053	0.824931	N/A	70	0	
LDR_UNBIAS	3	30	96.3215	97.8601	94.4706	0.818365	N/A	70	0.06824	-20.31
LDR_UNBIAS	10	30	96.2638	97.7308	94.287	0.798555	N/A	70	-0.01736	0.31
LDR_UNBIAS	30	30	96.0763	97.5892	94.0485	0.821765	N/A	70	-0.16122	0.71
LDR_UNBIAS	50	30	95.7031	97.5641	94.4934	0.72005	N/A	70	-0.51247	1.13
LDR_UNBIAS	80	30	95.6764	97.2986	93.7921	0.745012	N/A	70	-0.50685	0.70
LDR_UNBIAS	100	30	95.5636	97.1117	93.5991	0.825054	N/A	70	-0.48378	0.52
HDR_BIASED	0	31	96.0072	98.0985	94.2069	0.929011	N/A	70	0	
HDR_BIASED	3	31	96.0464	98.2219	94.2053	0.924972	N/A	70	0.04993	
HDR_BIASED	10	31	96.011	98.2228	94.1958	0.943592	N/A	70	-0.00903	
HDR_BIASED	30	31	95.975	98.1625	94.1334	0.946816	N/A	70	-0.02516	
HDR_BIASED	50	31	95.8579	98.0844	94.0316	0.966312	N/A	70	-0.15813	
HDR_BIASED	80	31	95.6358	98.0075	93.6058	1.04443	N/A	70	-0.41507	
HDR_BIASED	100	31	95.3928	98.3994	93.3698	1.22564	N/A	70	-0.63309	
HDR_UNBIAS	0	30	96.2185	98.2207	94.5298	0.960092	N/A	70	0	
HDR_UNBIAS	3	30	96.2077	98.1802	94.593	0.960455	N/A	70	-0.00336	
HDR_UNBIAS	10	30	96.1573	98.2012	94.5199	0.939031	N/A	70	-0.05639	
HDR_UNBIAS	30	30	95.9905	97.9942	94.2938	0.929856	N/A	70	-0.22685	
HDR_UNBIAS	50	30	95.7857	97.6745	94.0261	0.920261	N/A	70	-0.45466	
HDR_UNBIAS	80	30	95.4579	97.4142	93.7556	0.935224	N/A	70	-0.7238	
HDR_UNBIAS	100	30	95.228	97.2884	93.4746	0.959788	N/A	70	-0.9347	

Plot of the average readings for each radiation/bias condition

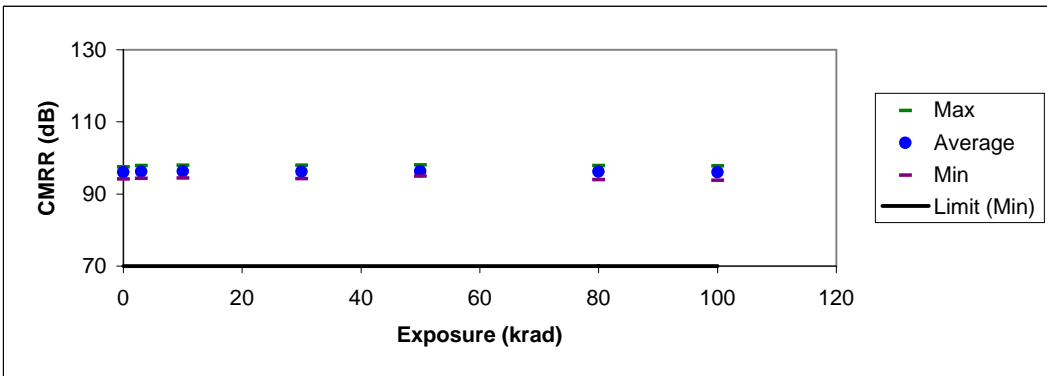


TEST ID: 1008 CMRR

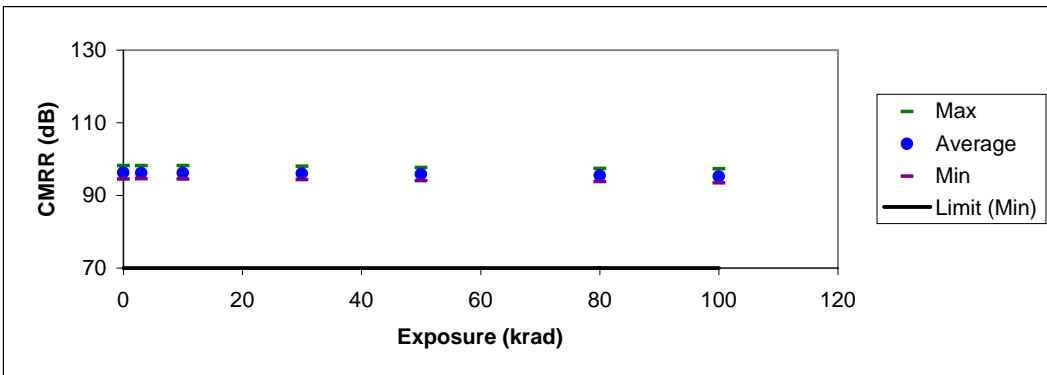
Low dose rate unbiased



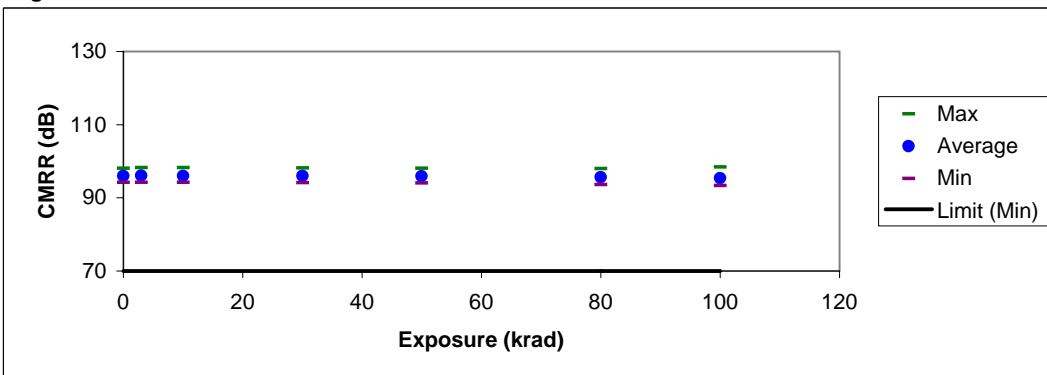
Low dose rate biased



High dose rate unbiased



High dose rate biased



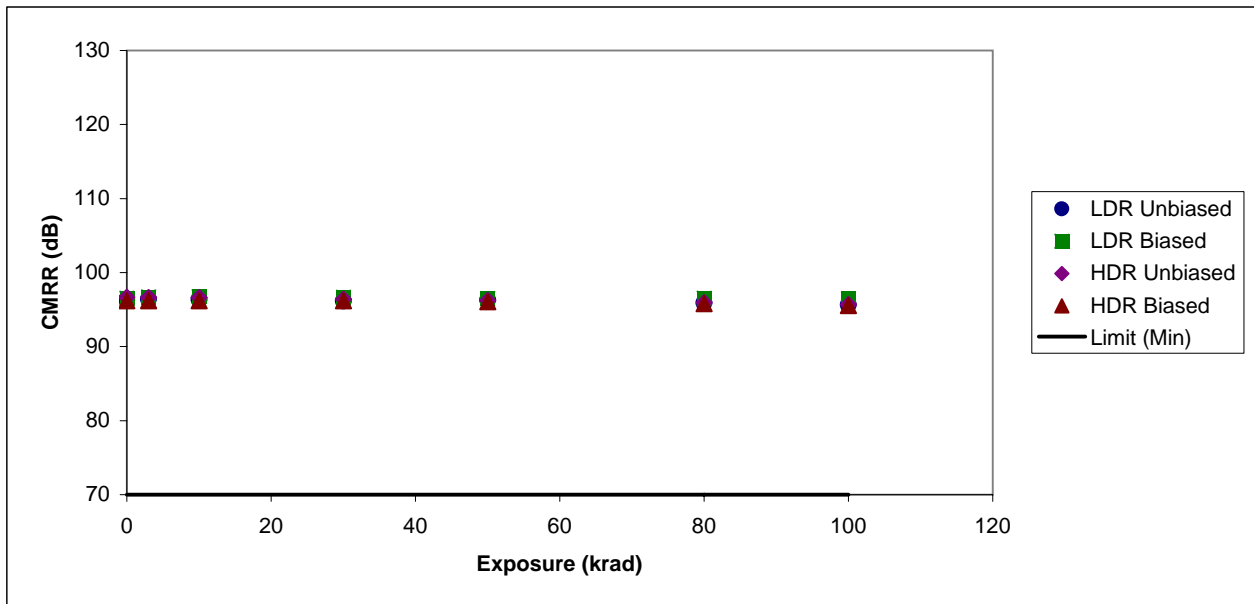
**TEST ID: 2008 CMRR**

Vcc=30V, Vin=0V to 28.5V, Vo=1.4V (dB)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

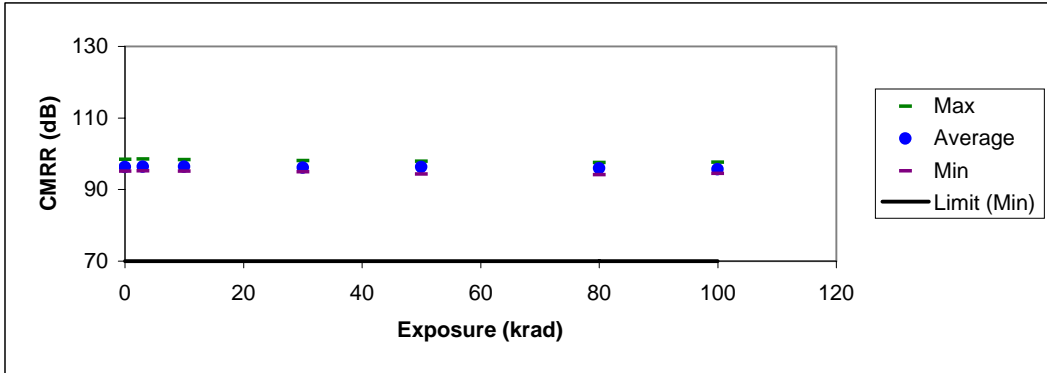
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	96.5439	98.4167	95.042	0.767253	N/A	70	0	
LDR_BIASED	3	30	96.7056	98.6018	95.3952	0.762141	N/A	70	0.17584	2.40
LDR_BIASED	10	30	96.7448	98.4741	95.4309	0.752913	N/A	70	0.21038	-15.69
LDR_BIASED	30	30	96.6854	98.6342	95.351	0.784994	N/A	70	0.18977	-6.89
LDR_BIASED	50	30	96.5082	98.4681	94.4358	0.93378	N/A	70	-0.12361	1.24
LDR_BIASED	80	30	96.5582	98.2919	95.1931	0.768039	N/A	70	0.04624	-0.13
LDR_BIASED	100	30	96.4549	98.1431	95.1616	0.794077	N/A	70	-0.05801	0.09
LDR_UNBIAS	0	30	96.3324	98.476	95.1669	0.728576	N/A	70	0	
LDR_UNBIAS	3	30	96.4016	98.5004	95.2542	0.752254	N/A	70	0.06133	-1.92
LDR_UNBIAS	10	30	96.3519	98.3717	95.1426	0.732458	N/A	70	0.03631	-0.77
LDR_UNBIAS	30	30	96.1399	98.1165	94.9432	0.756461	N/A	70	-0.1829	0.66
LDR_UNBIAS	50	30	96.302	97.869	94.3165	0.830054	N/A	70	0.15282	-0.33
LDR_UNBIAS	80	30	95.9094	97.5811	94.1031	0.814988	N/A	70	-0.51512	0.66
LDR_UNBIAS	100	30	95.6262	97.6408	94.459	0.739812	N/A	70	-0.64165	0.67
HDR_BIASED	0	31	96.1766	98.3061	93.8151	1.00198	N/A	70	0	
HDR_BIASED	3	31	96.2089	98.4386	93.9843	1.03705	N/A	70	0.07312	
HDR_BIASED	10	31	96.2026	98.5396	93.9375	1.02993	N/A	70	-0.01341	
HDR_BIASED	30	31	96.1746	98.5176	93.8502	1.0413	N/A	70	-0.02753	
HDR_BIASED	50	31	96.0625	98.4968	93.753	1.0439	N/A	70	-0.09941	
HDR_BIASED	80	31	95.8258	98.237	93.5251	1.07113	N/A	70	-0.3635	
HDR_BIASED	100	31	95.5396	97.8211	92.9689	1.10567	N/A	70	-0.67151	
HDR_UNBIAS	0	30	96.6847	99.247	94.9935	1.05827	N/A	70	0	
HDR_UNBIAS	3	30	96.6364	98.7915	95.0376	0.978818	N/A	70	-0.03187	
HDR_UNBIAS	10	30	96.6237	98.9269	94.945	1.0275	N/A	70	-0.04739	
HDR_UNBIAS	30	30	96.4284	98.8609	94.8894	1.00961	N/A	70	-0.27782	
HDR_UNBIAS	50	30	96.2446	98.6941	94.7666	1.03625	N/A	70	-0.46951	
HDR_UNBIAS	80	30	95.9282	98.222	94.3227	1.04296	N/A	70	-0.77649	
HDR_UNBIAS	100	30	95.6987	97.9997	94.1172	1.04655	N/A	70	-0.95909	

Plot of the average readings for each radiation/bias condition

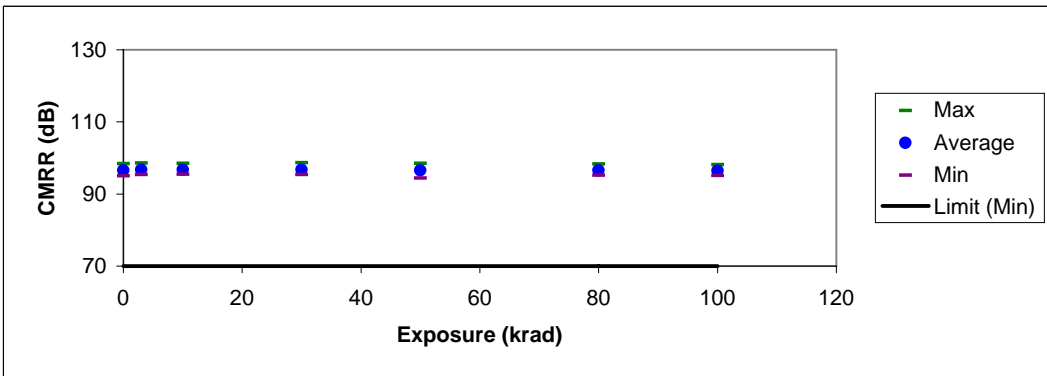


TEST ID: 2008 CMRR

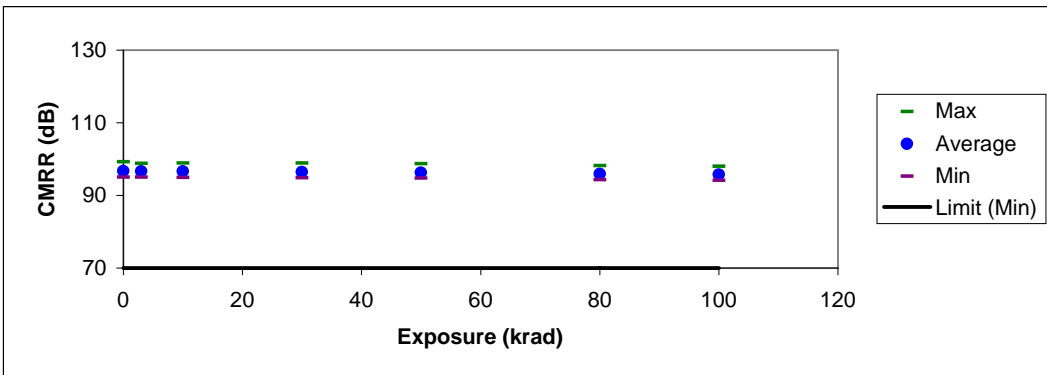
Low dose rate unbiased



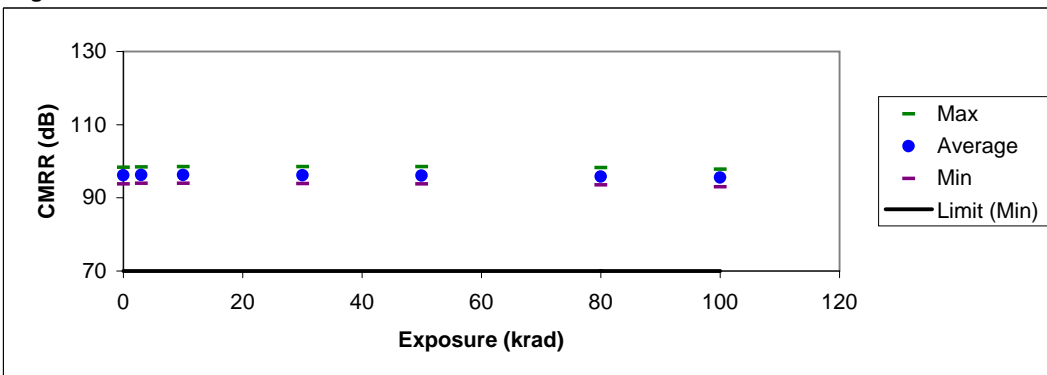
Low dose rate biased



High dose rate unbiased



High dose rate biased



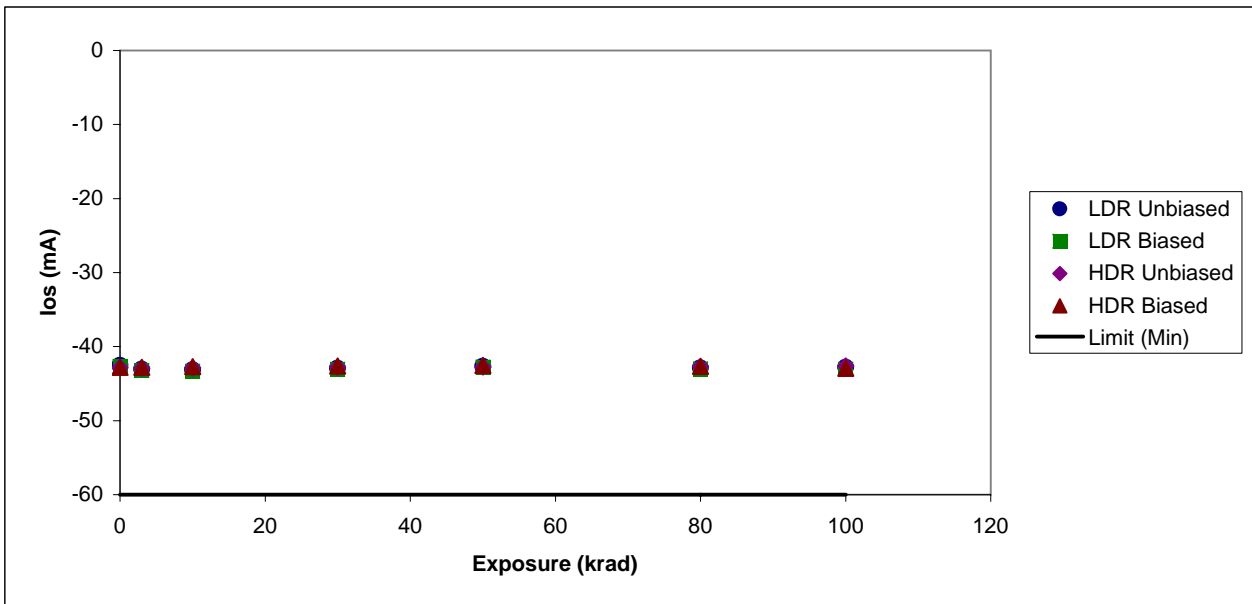
**TEST ID: 1009 Output Short CCT Current; +Ios**

+Vcc=5V, Vo=0V (mA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

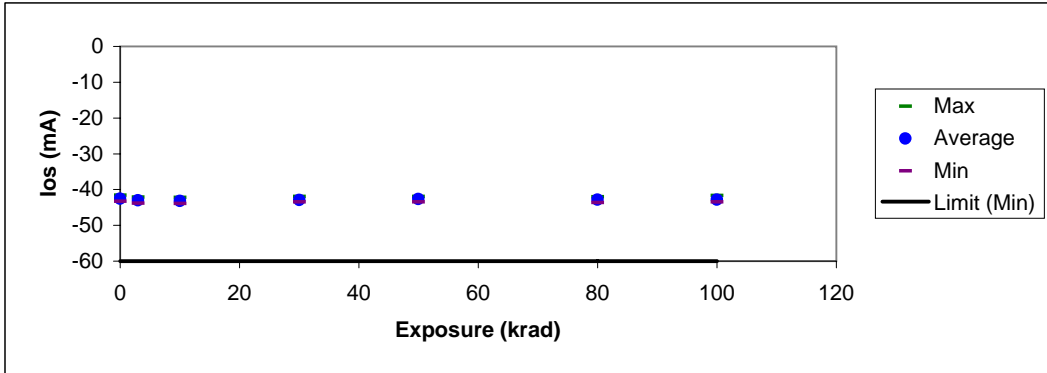
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	-42.6506	-41.9846	-43.6109	0.394528	N/A	-60	0	
LDR_BIASED	3	30	-43.2385	-42.3269	-43.8021	0.336591	N/A	-60	-0.56302	5.93
LDR_BIASED	10	30	-43.3218	-42.8187	-43.84	0.286451	N/A	-60	-0.67057	-59.19
LDR_BIASED	30	30	-43.0706	-42.4561	-43.7569	0.286945	N/A	-60	-0.30199	-2.47
LDR_BIASED	50	30	-42.7666	-42.0266	-43.2576	0.331865	N/A	-60	-0.10193	-0.67
LDR_BIASED	80	30	-42.9993	-42.2317	-43.6879	0.39375	N/A	-60	-0.46484	-3.46
LDR_BIASED	100	30	-43.0353	-42.2935	-43.9233	0.432267	N/A	-60	-0.52765	-5.07
LDR_UNBIAS	0	30	-42.5465	-41.6216	-43.2901	0.446424	N/A	-60	0	
LDR_UNBIAS	3	30	-43.0452	-42.0724	-43.8085	0.413966	N/A	-60	-0.54021	6.64
LDR_UNBIAS	10	30	-43.1602	-42.186	-43.8603	0.392235	N/A	-60	-0.64658	8.79
LDR_UNBIAS	30	30	-42.9177	-41.9751	-43.4711	0.355311	N/A	-60	-0.3364	-13.27
LDR_UNBIAS	50	30	-42.6702	-41.906	-43.4923	0.385919	N/A	-60	-0.19033	-2.02
LDR_UNBIAS	80	30	-42.8707	-41.9982	-43.6263	0.420356	N/A	-60	-0.38032	-2.09
LDR_UNBIAS	100	30	-42.788	-41.6767	-43.4711	0.414453	N/A	-60	-0.23732	-1.07
HDR_BIASED	0	31	-42.8017	-42.1999	-43.6696	0.437913	N/A	-60	0	
HDR_BIASED	3	31	-42.7954	-41.8397	-43.624	0.414528	N/A	-60	-0.09489	
HDR_BIASED	10	31	-42.6955	-41.7558	-43.4273	0.392262	N/A	-60	0.01133	
HDR_BIASED	30	31	-42.6144	-41.6652	-43.3679	0.41446	N/A	-60	0.12236	
HDR_BIASED	50	31	-42.5572	-41.6056	-43.3242	0.408913	N/A	-60	0.15162	
HDR_BIASED	80	31	-42.6443	-41.9243	-43.6858	0.402812	N/A	-60	0.13446	
HDR_BIASED	100	31	-42.905	-42.1343	-44.2282	0.511788	N/A	-60	0.104	
HDR_UNBIAS	0	30	-42.8566	-41.8252	-43.3799	0.445118	N/A	-60	0	
HDR_UNBIAS	3	30	-42.9045	-41.9969	-43.4969	0.447078	N/A	-60	-0.0814	
HDR_UNBIAS	10	30	-42.8948	-41.9743	-43.5079	0.451678	N/A	-60	-0.07354	
HDR_UNBIAS	30	30	-42.7812	-41.7972	-43.4656	0.475105	N/A	-60	0.02535	
HDR_UNBIAS	50	30	-42.74	-41.7402	-43.4611	0.469772	N/A	-60	0.09443	
HDR_UNBIAS	80	30	-42.7121	-41.7831	-43.4671	0.446336	N/A	-60	0.18214	
HDR_UNBIAS	100	30	-42.63	-41.8673	-43.2147	0.384825	N/A	-60	0.22097	

Plot of the average readings for each radiation/bias condition

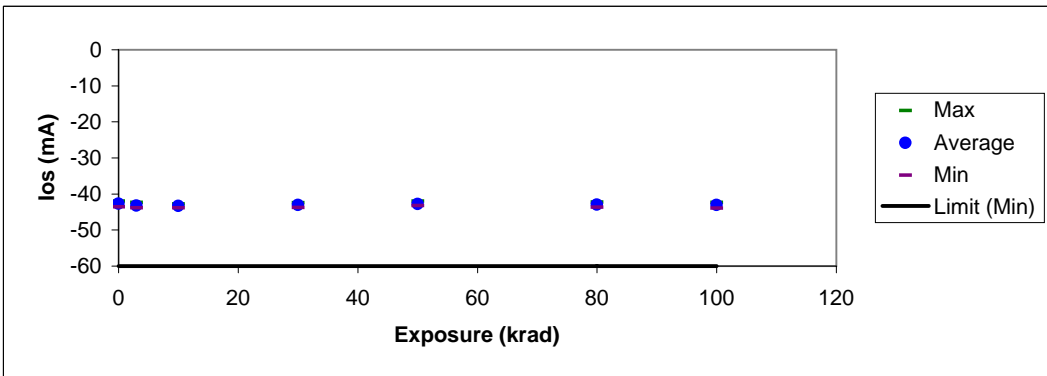


TEST ID: 1009 Output Short CCT Current; +Ios

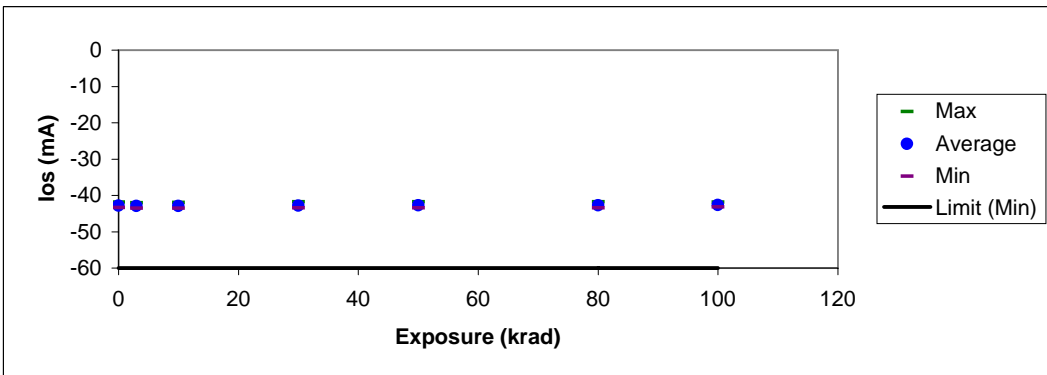
Low dose rate unbiased



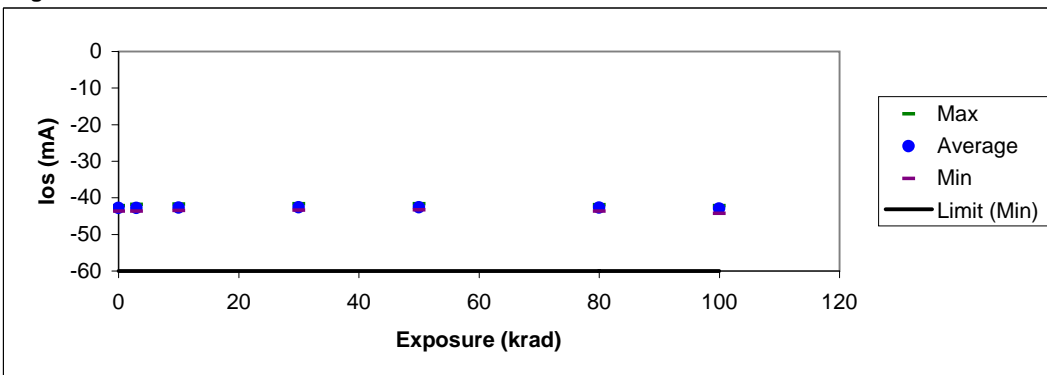
Low dose rate biased



High dose rate unbiased



High dose rate biased



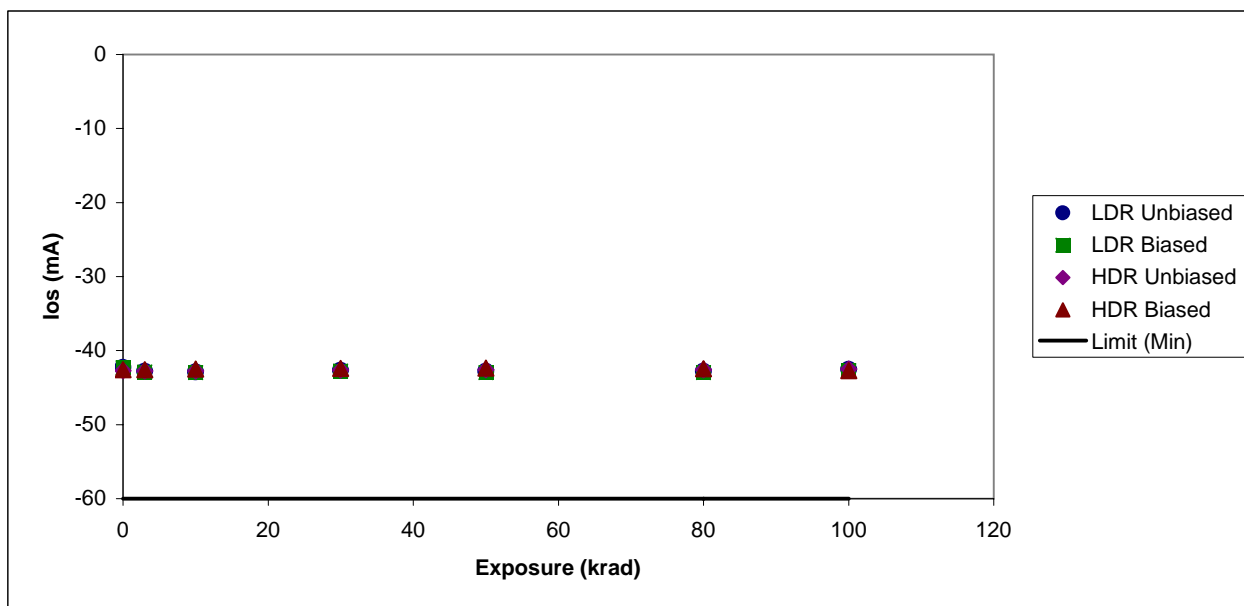
**TEST ID: 2009 Output Short CCT Current; +Ios**

+Vcc=5V, Vo=0V (mA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

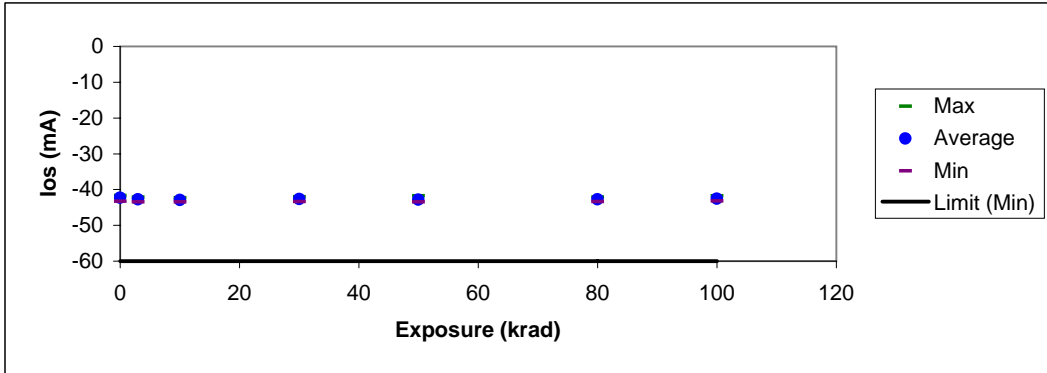
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-42.3201	-41.4989	-42.9022	0.402765	N/A	-60	0	
LDR_BIAS	3	30	-42.9018	-42.2349	-43.5121	0.370498	N/A	-60	-0.54757	6.37
LDR_BIAS	10	30	-42.9849	-42.3603	-43.4513	0.309037	N/A	-60	-0.6786	-51.96
LDR_BIAS	30	30	-42.736	-42.1321	-43.2264	0.311735	N/A	-60	-0.30195	-2.52
LDR_BIAS	50	30	-42.9847	-42.3495	-43.6907	0.315708	N/A	-60	-0.60607	-4.08
LDR_BIAS	80	30	-42.9705	-42.3382	-43.5956	0.31066	N/A	-60	-0.58469	-4.75
LDR_BIAS	100	30	-42.7073	-41.858	-43.6283	0.498098	N/A	-60	-0.47481	-5.82
LDR_UNBIAS	0	30	-42.2895	-41.6622	-43.2344	0.436368	N/A	-60	0	
LDR_UNBIAS	3	30	-42.7821	-42.099	-43.4338	0.391149	N/A	-60	-0.52854	6.49
LDR_UNBIAS	10	30	-42.8976	-42.264	-43.4776	0.363292	N/A	-60	-0.63975	8.63
LDR_UNBIAS	30	30	-42.6579	-42.0524	-43.3829	0.333493	N/A	-60	-0.3301	-13.26
LDR_UNBIAS	50	30	-42.8137	-41.7182	-43.4267	0.392876	N/A	-60	-0.45956	-4.94
LDR_UNBIAS	80	30	-42.779	-42.0902	-43.3705	0.382433	N/A	-60	-0.45126	-2.46
LDR_UNBIAS	100	30	-42.5296	-41.7581	-43.1977	0.403915	N/A	-60	-0.22174	-1.03
HDR_BIAS	0	31	-42.5878	-41.8893	-43.4331	0.44922	N/A	-60	0	
HDR_BIAS	3	31	-42.5817	-42.0438	-43.2351	0.336602	N/A	-60	-0.08594	
HDR_BIAS	10	31	-42.4826	-42.0447	-43.0759	0.301439	N/A	-60	0.01306	
HDR_BIAS	30	31	-42.4008	-41.9098	-42.9901	0.315526	N/A	-60	0.11964	
HDR_BIAS	50	31	-42.344	-41.8608	-43.0086	0.312659	N/A	-60	0.14845	
HDR_BIAS	80	31	-42.4358	-41.909	-43.3305	0.339485	N/A	-60	0.12317	
HDR_BIAS	100	31	-42.7003	-41.8497	-43.968	0.525747	N/A	-60	0.08163	
HDR_UNBIAS	0	30	-42.7139	-41.8632	-43.1412	0.351872	N/A	-60	0	
HDR_UNBIAS	3	30	-42.7621	-42.032	-43.3437	0.368276	N/A	-60	-0.0814	
HDR_UNBIAS	10	30	-42.7526	-42.0358	-43.3414	0.371959	N/A	-60	-0.07416	
HDR_UNBIAS	30	30	-42.6372	-41.8986	-43.2779	0.399274	N/A	-60	0.0249	
HDR_UNBIAS	50	30	-42.5969	-41.9107	-43.2521	0.38459	N/A	-60	0.093	
HDR_UNBIAS	80	30	-42.569	-41.9392	-43.2121	0.358318	N/A	-60	0.18321	
HDR_UNBIAS	100	30	-42.4882	-41.8668	-43.0511	0.319284	N/A	-60	0.21544	

Plot of the average readings for each radiation/bias condition

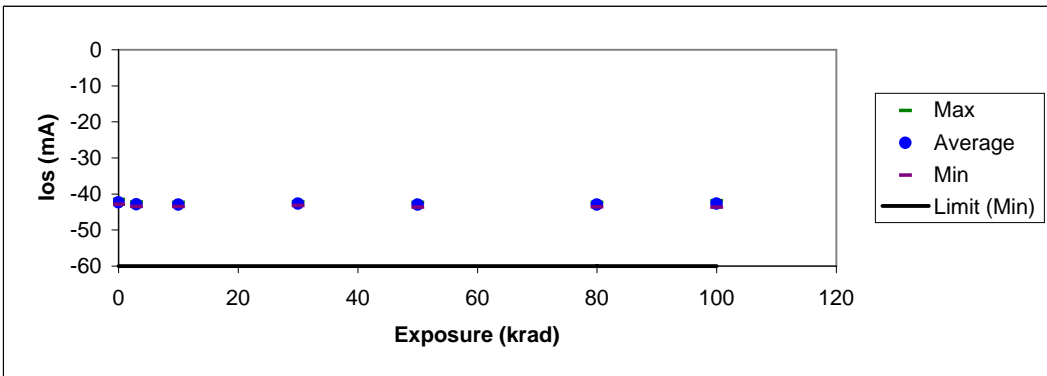


TEST ID: 2009 Output Short CCT Current; +Ios

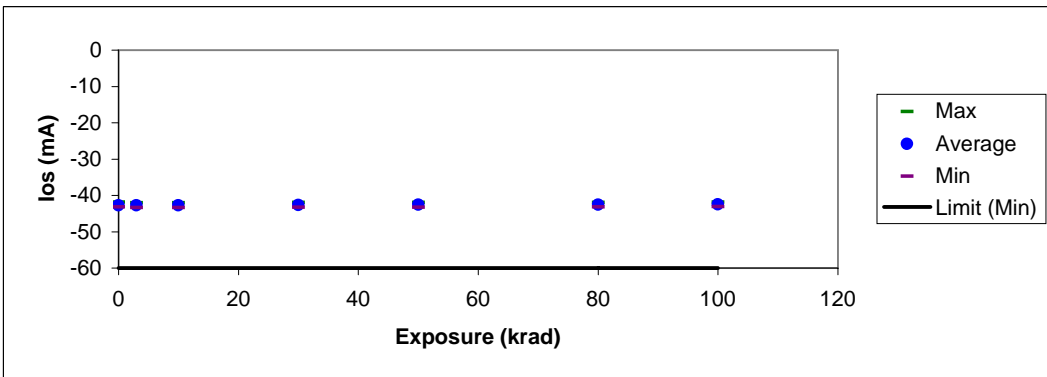
Low dose rate unbiased



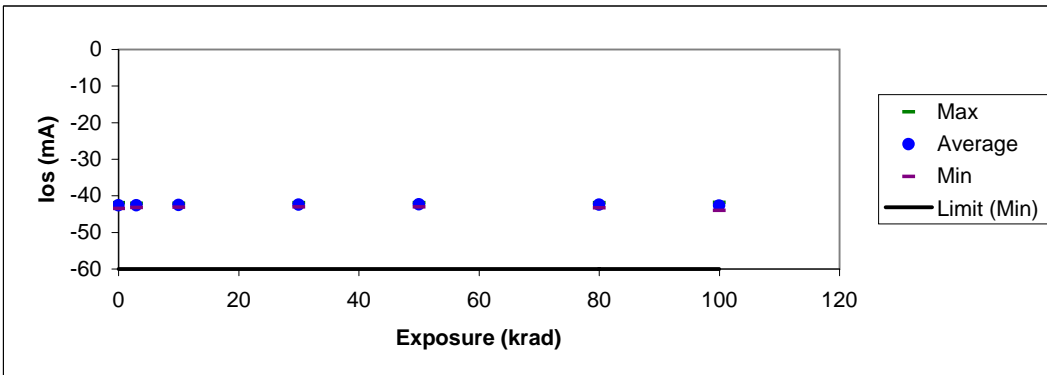
Low dose rate biased



High dose rate unbiased



High dose rate biased



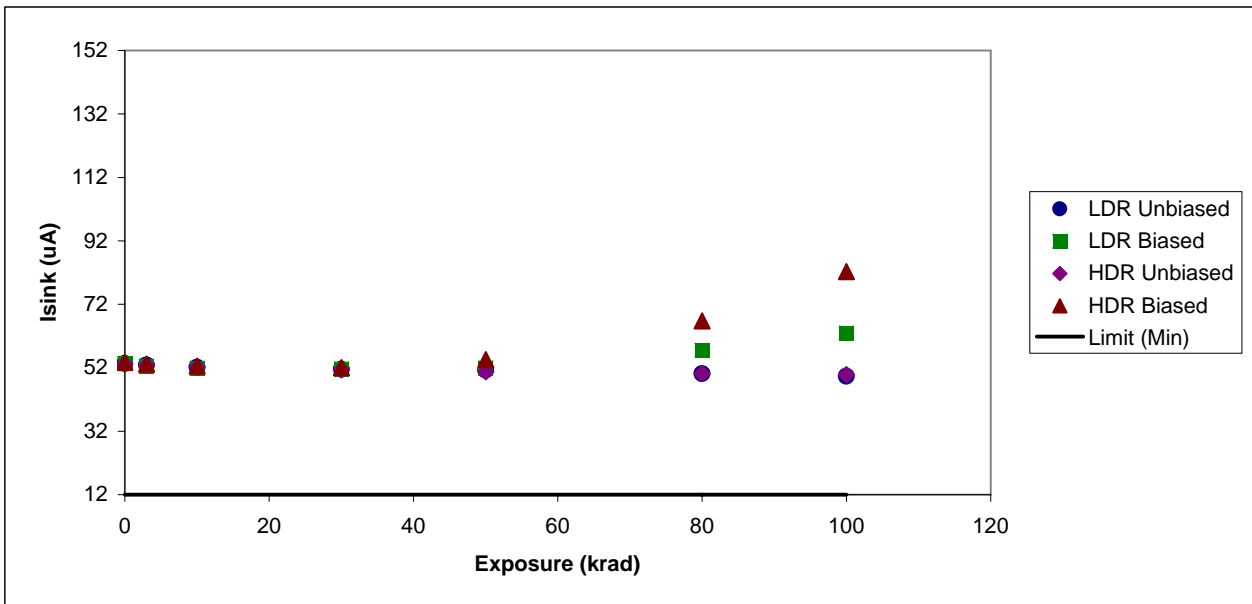
**TEST ID: 1010 Output Sink Current; Isink**

V+=15V, Vin=65mV, Vo=200mV (uA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

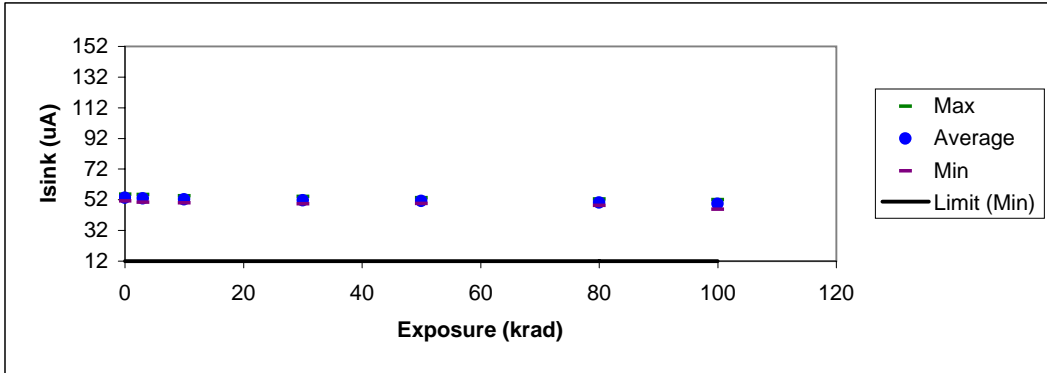
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	53.3698	55.1066	52.0977	0.908378	N/A	12	0	
LDR_BIASED	3	30	52.5336	54.5442	51.1853	1.03934	N/A	12	-0.88292	1.53
LDR_BIASED	10	30	51.8047	53.8055	50.4586	1.05516	N/A	12	-1.58179	1.38
LDR_BIASED	30	30	51.5977	53.4962	50.14	1.14312	N/A	12	-1.90922	1.15
LDR_BIASED	50	30	51.9652	55.839	50.3375	1.53457	N/A	12	-1.73104	1.17
LDR_BIASED	80	30	57.471	84.6178	50.6152	11.3519	N/A	12	-0.97164	-0.38
LDR_BIASED	100	30	62.9679	103.843	51.0722	16.8046	N/A	12	2.27353	0.18
LDR_UNBIAS	0	30	53.3945	55.6459	51.1414	1.10095	N/A	12	0	
LDR_UNBIAS	3	30	52.8966	55.3063	50.4604	1.14932	N/A	12	-0.51138	1.49
LDR_UNBIAS	10	30	52.1822	54.4705	49.9278	1.14758	N/A	12	-1.20935	1.28
LDR_UNBIAS	30	30	51.5652	54.1068	49.4448	1.19787	N/A	12	-1.87523	1.01
LDR_UNBIAS	50	30	51.2503	53.3037	49.6528	0.876012	N/A	12	-2.09663	0.87
LDR_UNBIAS	80	30	50.1311	52.5762	48.2843	1.11559	N/A	12	-3.37225	1.10
LDR_UNBIAS	100	30	49.2795	52.1133	45.8086	1.48466	N/A	12	-4.13456	1.24
HDR_BIASED	0	31	53.6347	55.1906	51.8579	1.0369	N/A	12	0	
HDR_BIASED	3	31	53.1325	54.9999	51.7534	1.0593	N/A	12	-0.57698	
HDR_BIASED	10	31	52.5386	54.4193	51.1334	1.08646	N/A	12	-1.14825	
HDR_BIASED	30	31	52.0575	53.7678	50.3839	1.10208	N/A	12	-1.65377	
HDR_BIASED	50	31	54.5427	67.7552	50.4137	5.32717	N/A	12	-1.47673	
HDR_BIASED	80	31	66.7554	111.858	51.8578	19.1666	N/A	12	2.58922	
HDR_BIASED	100	31	82.3032	150.519	55.3908	29.7175	N/A	12	12.8863	
HDR_UNBIAS	0	30	53.1568	55.408	51.346	1.05934	N/A	12	0	
HDR_UNBIAS	3	30	52.7908	55.0066	51.0288	1.06435	N/A	12	-0.34288	
HDR_UNBIAS	10	30	52.1809	54.519	50.3828	1.08829	N/A	12	-0.94179	
HDR_UNBIAS	30	30	51.2983	53.8879	49.4016	1.13744	N/A	12	-1.85199	
HDR_UNBIAS	50	30	50.7769	53.5146	48.7785	1.18865	N/A	12	-2.39666	
HDR_UNBIAS	80	30	50.1235	53.1137	48.0448	1.26239	N/A	12	-3.05747	
HDR_UNBIAS	100	30	49.8532	52.8848	47.6438	1.32425	N/A	12	-3.34002	

Plot of the average readings for each radiation/bias condition

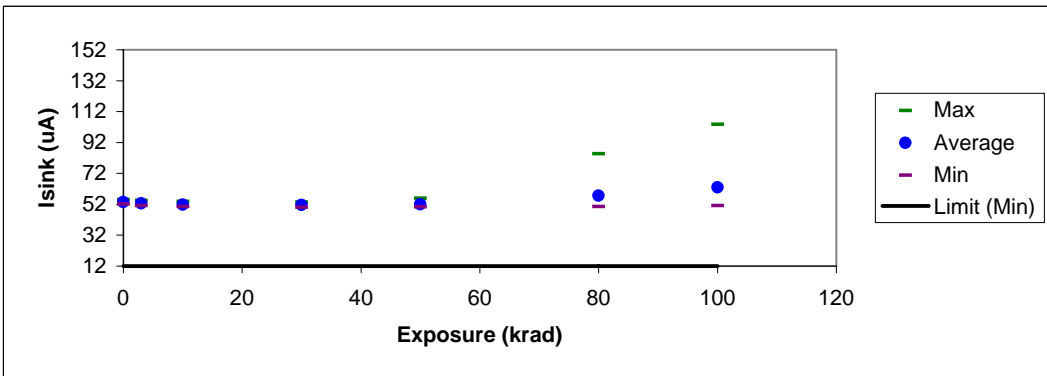


TEST ID: 1010 Output Sink Current; Isink

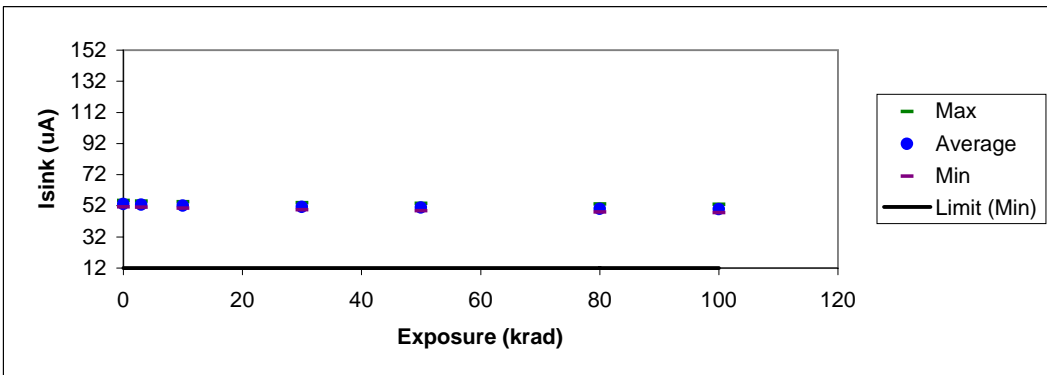
Low dose rate unbiased



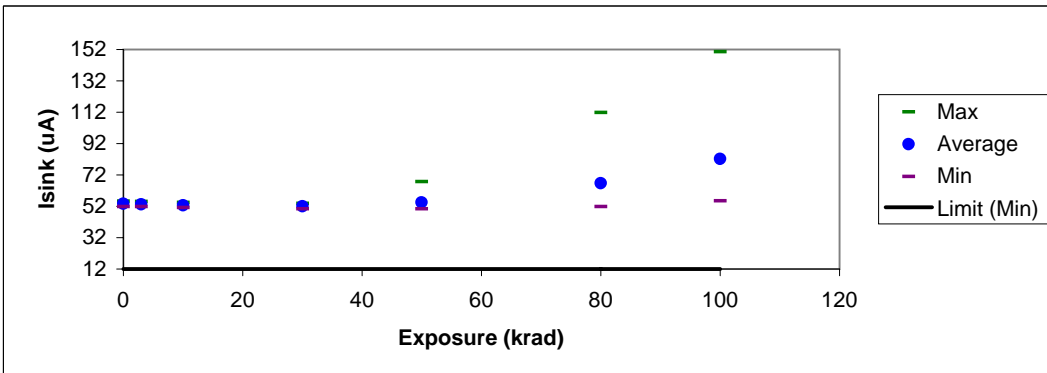
Low dose rate biased



High dose rate unbiased



High dose rate biased



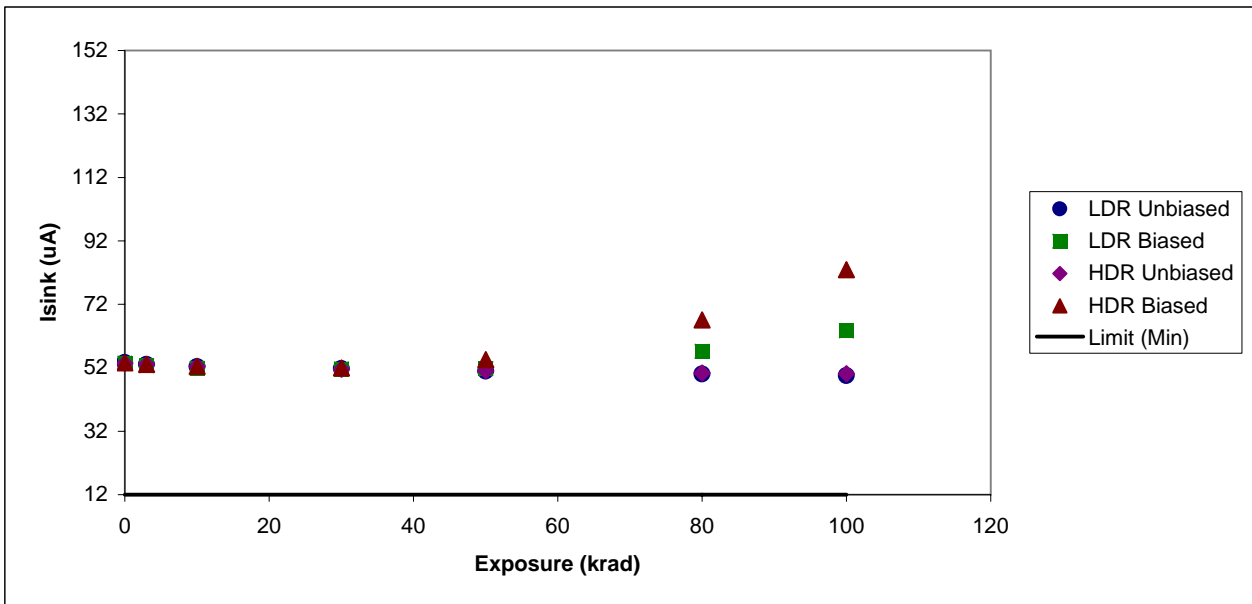
**TEST ID: 2010 Output Sink Current; Isink**

V+=15V, Vin=65mV, Vo=200mV (uA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

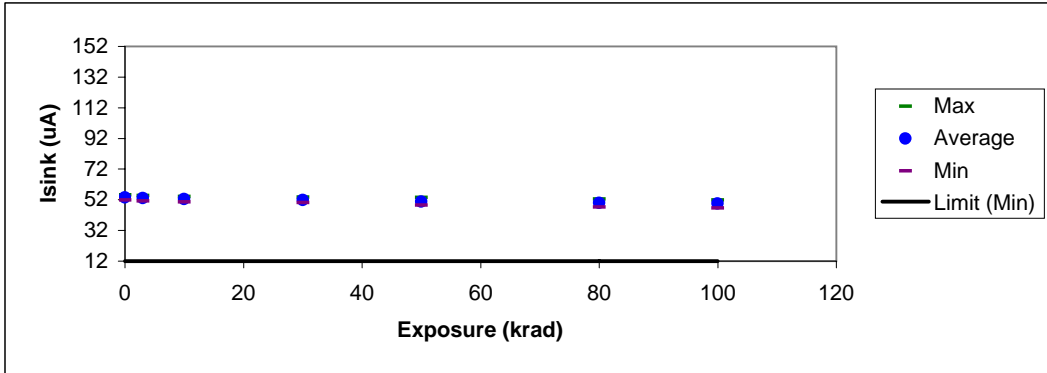
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	53.4392	55.2457	52.2536	0.661087	N/A	12	0	
LDR_BIASED	3	30	52.6077	54.3996	51.3838	0.793759	N/A	12	-0.85459	1.54
LDR_BIASED	10	30	51.8798	53.7835	50.7391	0.796894	N/A	12	-1.56907	1.40
LDR_BIASED	30	30	51.6686	53.6141	50.3747	0.851734	N/A	12	-1.90366	1.17
LDR_BIASED	50	30	51.7794	57.0331	49.7987	1.92175	N/A	12	-2.4928	1.74
LDR_BIASED	80	30	57.1699	84.3877	50.2874	11.3795	N/A	12	-1.24839	-0.35
LDR_BIASED	100	30	63.6504	104.261	51.449	16.7917	N/A	12	2.32033	0.15
LDR_UNBIAS	0	30	53.6128	55.2868	51.8238	0.745605	N/A	12	0	
LDR_UNBIAS	3	30	53.1018	54.7021	51.1259	0.813531	N/A	12	-0.53638	1.63
LDR_UNBIAS	10	30	52.3817	54.0902	50.5714	0.780549	N/A	12	-1.2364	1.33
LDR_UNBIAS	30	30	51.7632	53.7522	50.103	0.817269	N/A	12	-1.85751	1.00
LDR_UNBIAS	50	30	50.8993	53.4822	48.591	1.26135	N/A	12	-2.93049	1.22
LDR_UNBIAS	80	30	49.9999	52.5632	47.2266	1.2171	N/A	12	-3.73406	1.22
LDR_UNBIAS	100	30	49.4818	51.8635	46.7232	1.13969	N/A	12	-4.20479	1.27
HDR_BIASED	0	31	53.5122	55.4066	51.4691	0.913802	N/A	12	0	
HDR_BIASED	3	31	53.0305	55.2156	51.5658	0.903935	N/A	12	-0.55409	
HDR_BIASED	10	31	52.4395	54.6595	50.9473	0.913869	N/A	12	-1.12169	
HDR_BIASED	30	31	51.9522	54.0263	50.4754	0.91649	N/A	12	-1.62254	
HDR_BIASED	50	31	54.523	70.0452	50.7615	5.58712	N/A	12	-1.42986	
HDR_BIASED	80	31	67.0644	110.911	52.3172	19.7351	N/A	12	3.5417	
HDR_BIASED	100	31	82.8759	147.751	55.3613	30.1722	N/A	12	15.1445	
HDR_UNBIAS	0	30	53.3799	55.1683	51.1682	0.931762	N/A	12	0	
HDR_UNBIAS	3	30	53.022	54.8611	50.8828	0.931195	N/A	12	-0.32858	
HDR_UNBIAS	10	30	52.4114	54.3417	50.2671	0.946587	N/A	12	-0.93162	
HDR_UNBIAS	30	30	51.5282	53.3353	49.2665	0.973346	N/A	12	-1.85172	
HDR_UNBIAS	50	30	51.01	52.7688	48.643	1.01312	N/A	12	-2.39399	
HDR_UNBIAS	80	30	50.3607	52.1239	47.924	1.07508	N/A	12	-3.06086	
HDR_UNBIAS	100	30	50.0975	52.1282	47.5183	1.14084	N/A	12	-3.30072	

Plot of the average readings for each radiation/bias condition

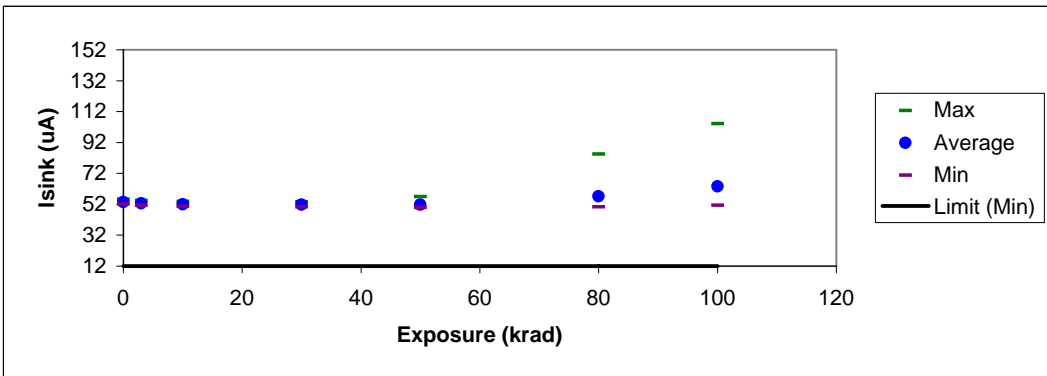


TEST ID: 2010 Output Sink Current; Isink

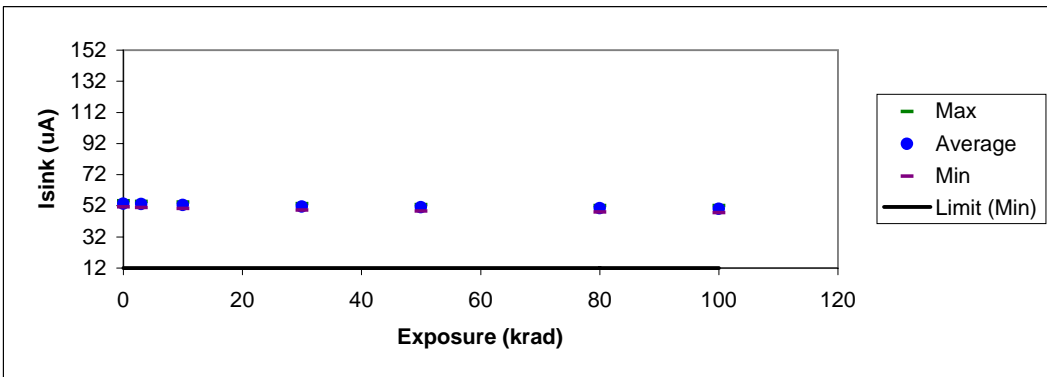
Low dose rate unbiased



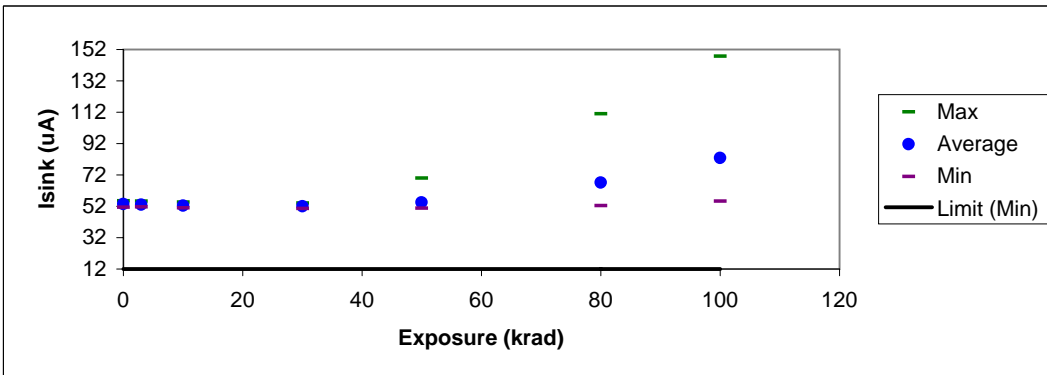
Low dose rate biased



High dose rate unbiased



High dose rate biased



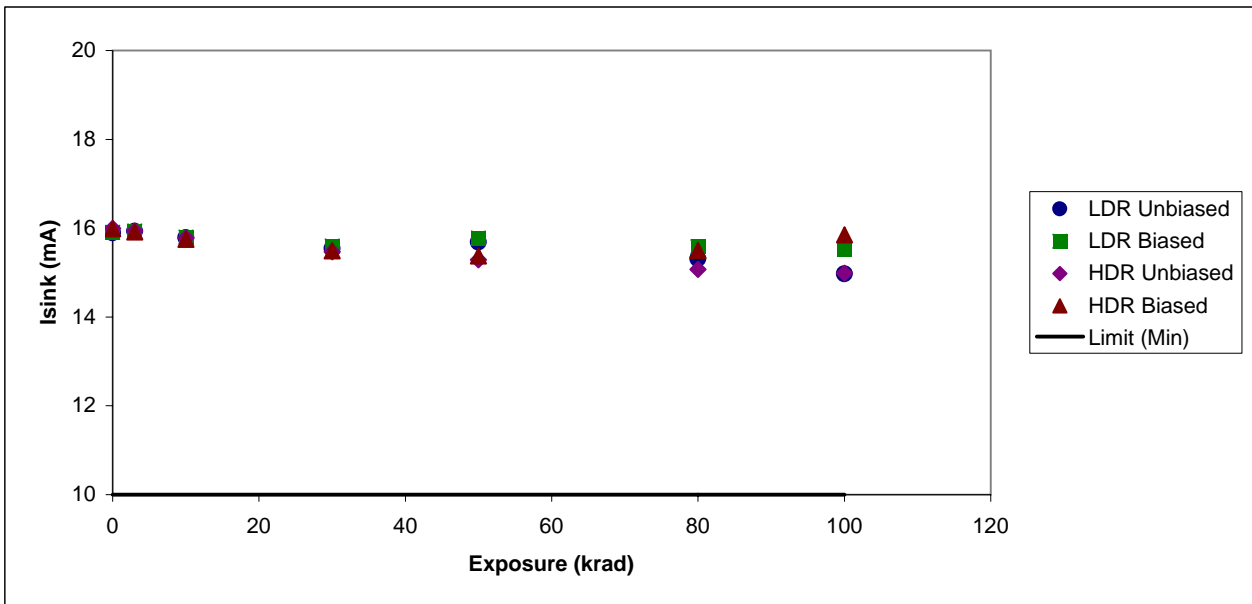
**TEST ID: 1011 Output Sink Current; Isink**

V+=15V, Vin=65mV, Vo=2V (mA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

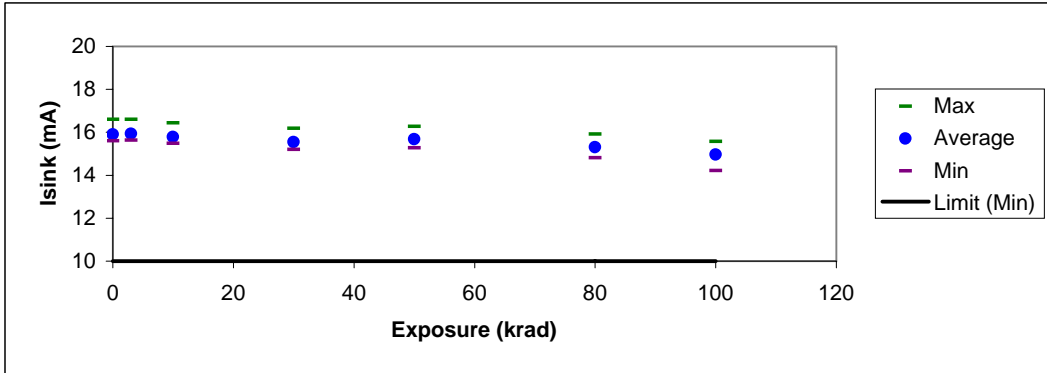
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	15.9076	16.6424	15.5061	0.275776	N/A	10	0	
LDR_BIASED	3	30	15.9383	16.618	15.5893	0.2329	N/A	10	0.01439	-0.30
LDR_BIASED	10	30	15.8003	16.497	15.4211	0.243267	N/A	10	-0.10074	0.46
LDR_BIASED	30	30	15.6011	16.2449	15.2651	0.242078	N/A	10	-0.28566	0.56
LDR_BIASED	50	30	15.7806	16.4622	15.4241	0.270298	N/A	10	-0.12534	0.20
LDR_BIASED	80	30	15.5844	16.6431	15.1333	0.375991	N/A	10	-0.27617	0.44
LDR_BIASED	100	30	15.5245	17.3803	14.8486	0.635523	N/A	10	-0.52812	0.97
LDR_UNBIAS	0	30	15.8947	16.6024	15.6107	0.221354	N/A	10	0	
LDR_UNBIAS	3	30	15.9258	16.5958	15.6335	0.193892	N/A	10	0.03313	-0.63
LDR_UNBIAS	10	30	15.7842	16.436	15.4836	0.205546	N/A	10	-0.10326	0.46
LDR_UNBIAS	30	30	15.5412	16.1813	15.1989	0.218564	N/A	10	-0.35249	0.66
LDR_UNBIAS	50	30	15.6833	16.2692	15.2801	0.236712	N/A	10	-0.24495	0.36
LDR_UNBIAS	80	30	15.3114	15.9175	14.8178	0.310238	N/A	10	-0.58217	0.67
LDR_UNBIAS	100	30	14.9679	15.577	14.2124	0.306085	N/A	10	-0.9335	1.00
HDR_BIASED	0	31	15.985	16.558	15.706	0.174111	N/A	10	0	
HDR_BIASED	3	31	15.9183	16.5446	15.6569	0.188636	N/A	10	-0.04849	
HDR_BIASED	10	31	15.7498	16.3377	15.4633	0.184523	N/A	10	-0.2203	
HDR_BIASED	30	31	15.4934	16.0362	15.1808	0.193983	N/A	10	-0.51162	
HDR_BIASED	50	31	15.3728	15.9537	15.0275	0.212705	N/A	10	-0.64218	
HDR_BIASED	80	31	15.4973	16.9345	14.9632	0.469255	N/A	10	-0.63199	
HDR_BIASED	100	31	15.8495	17.9118	15.1244	0.776677	N/A	10	-0.54343	
HDR_UNBIAS	0	30	15.9961	16.6283	15.608	0.263996	N/A	10	0	
HDR_UNBIAS	3	30	15.9358	16.5969	15.4974	0.274633	N/A	10	-0.05266	
HDR_UNBIAS	10	30	15.7785	16.4051	15.3405	0.271749	N/A	10	-0.22592	
HDR_UNBIAS	30	30	15.4696	16.0287	15.0689	0.27098	N/A	10	-0.53076	
HDR_UNBIAS	50	30	15.2857	15.7995	14.8641	0.269166	N/A	10	-0.68614	
HDR_UNBIAS	80	30	15.0749	15.5839	14.6105	0.275158	N/A	10	-0.86348	
HDR_UNBIAS	100	30	14.9836	15.4627	14.5067	0.268548	N/A	10	-0.938	

Plot of the average readings for each radiation/bias condition

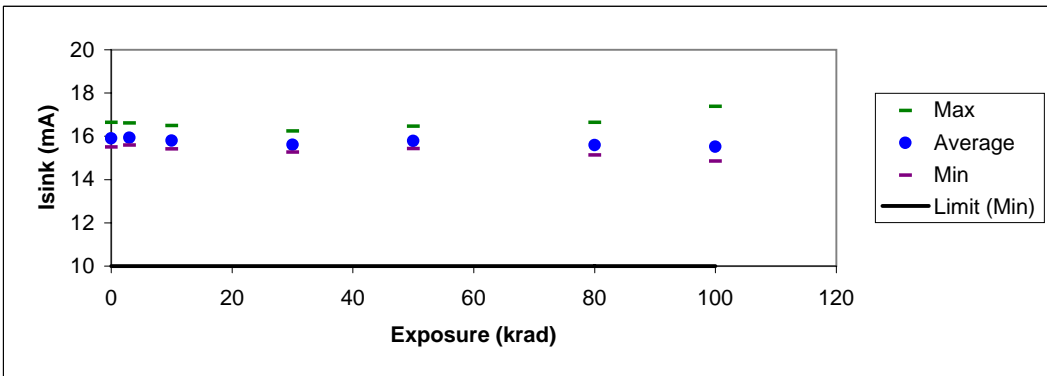


TEST ID: 1011 Output Sink Current; Isink

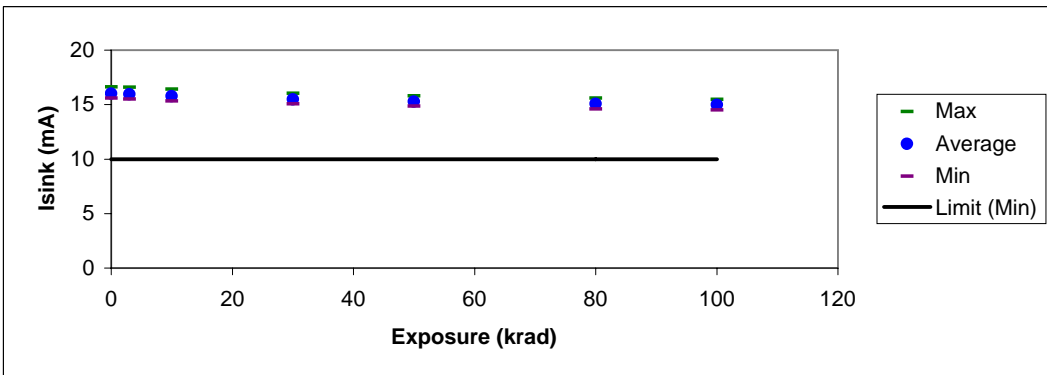
Low dose rate unbiased



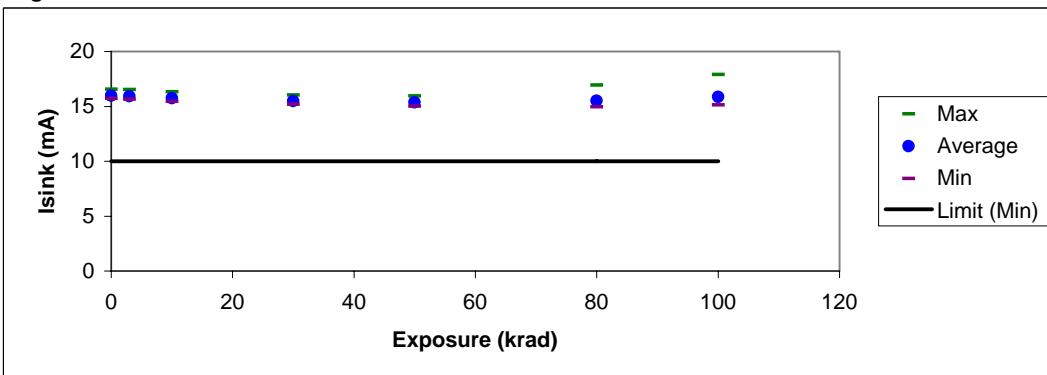
Low dose rate biased



High dose rate unbiased



High dose rate biased



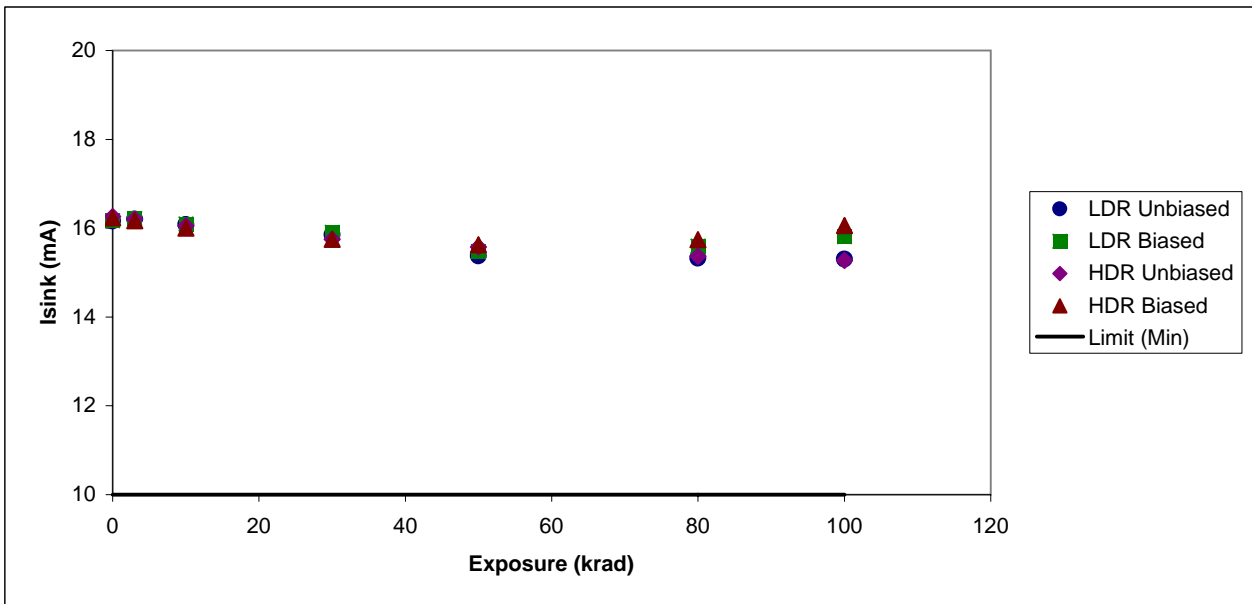
**TEST ID: 2011 Output Sink Current; Isink**

V+=15V, Vin=65mV, Vo=2V (mA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

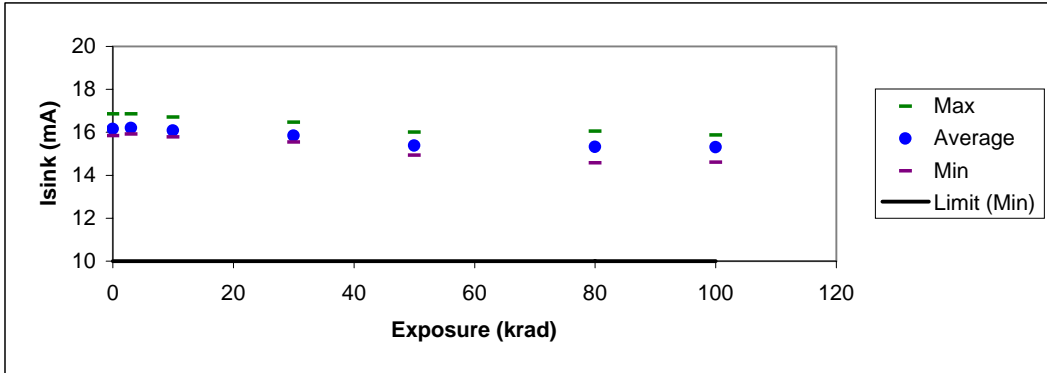
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	16.1655	16.9403	15.7977	0.284782	N/A	10	0	
LDR_BIASED	3	30	16.2202	16.9345	15.9116	0.238164	N/A	10	0.04114	-0.83
LDR_BIASED	10	30	16.0968	16.7928	15.7518	0.248182	N/A	10	-0.05849	0.27
LDR_BIASED	30	30	15.9048	16.558	15.6051	0.247418	N/A	10	-0.24451	0.53
LDR_BIASED	50	30	15.4768	16.185	15.0851	0.261884	N/A	10	-0.66872	1.10
LDR_BIASED	80	30	15.5965	16.7875	14.9528	0.479976	N/A	10	-0.62207	0.99
LDR_BIASED	100	30	15.8096	17.4446	15.1961	0.61104	N/A	10	-0.46525	0.92
LDR_UNBIAS	0	30	16.1572	16.852	15.8353	0.233667	N/A	10	0	
LDR_UNBIAS	3	30	16.2063	16.8541	15.9189	0.201666	N/A	10	0.0567	-1.13
LDR_UNBIAS	10	30	16.081	16.7068	15.782	0.213731	N/A	10	-0.07313	0.34
LDR_UNBIAS	30	30	15.847	16.4734	15.5407	0.225854	N/A	10	-0.30062	0.58
LDR_UNBIAS	50	30	15.3774	16.0003	14.9304	0.228216	N/A	10	-0.78314	1.15
LDR_UNBIAS	80	30	15.325	16.0568	14.5756	0.325364	N/A	10	-0.79583	0.92
LDR_UNBIAS	100	30	15.3003	15.8761	14.6062	0.306077	N/A	10	-0.87354	0.94
HDR_BIASED	0	31	16.2305	16.8232	15.9346	0.181115	N/A	10	0	
HDR_BIASED	3	31	16.166	16.8414	15.8936	0.202634	N/A	10	-0.04972	
HDR_BIASED	10	31	16.0002	16.6412	15.7025	0.198098	N/A	10	-0.2141	
HDR_BIASED	30	31	15.7528	16.3576	15.4273	0.208181	N/A	10	-0.4656	
HDR_BIASED	50	31	15.6273	16.2487	15.2804	0.224845	N/A	10	-0.60989	
HDR_BIASED	80	31	15.7397	17.0114	15.2055	0.460687	N/A	10	-0.628	
HDR_BIASED	100	31	16.0597	17.9063	15.3782	0.734658	N/A	10	-0.50477	
HDR_UNBIAS	0	30	16.2592	16.9906	15.9544	0.274543	N/A	10	0	
HDR_UNBIAS	3	30	16.1996	16.9619	15.8396	0.285323	N/A	10	-0.05004	
HDR_UNBIAS	10	30	16.0504	16.7889	15.6909	0.28124	N/A	10	-0.21692	
HDR_UNBIAS	30	30	15.7509	16.434	15.3705	0.282008	N/A	10	-0.51835	
HDR_UNBIAS	50	30	15.574	16.2025	15.1743	0.277672	N/A	10	-0.68202	
HDR_UNBIAS	80	30	15.3699	15.9582	14.9328	0.279291	N/A	10	-0.86064	
HDR_UNBIAS	100	30	15.277	15.8531	14.83	0.266589	N/A	10	-0.93233	

Plot of the average readings for each radiation/bias condition

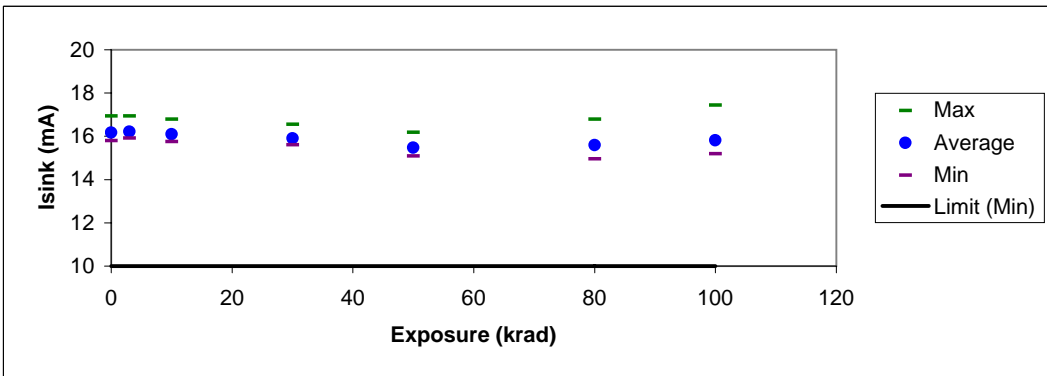


TEST ID: 2011 Output Sink Current; Isink

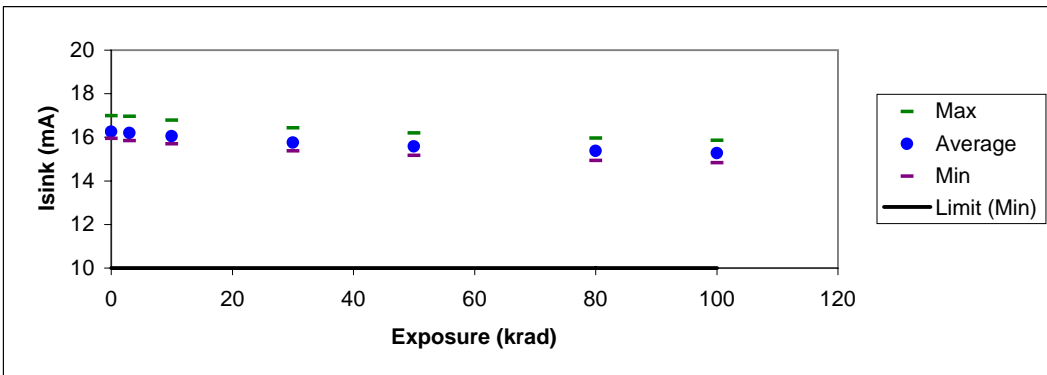
Low dose rate unbiased



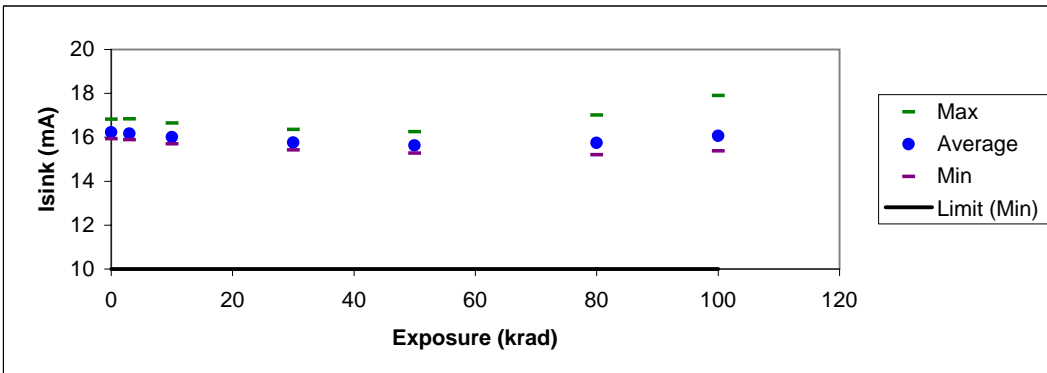
Low dose rate biased



High dose rate unbiased



High dose rate biased



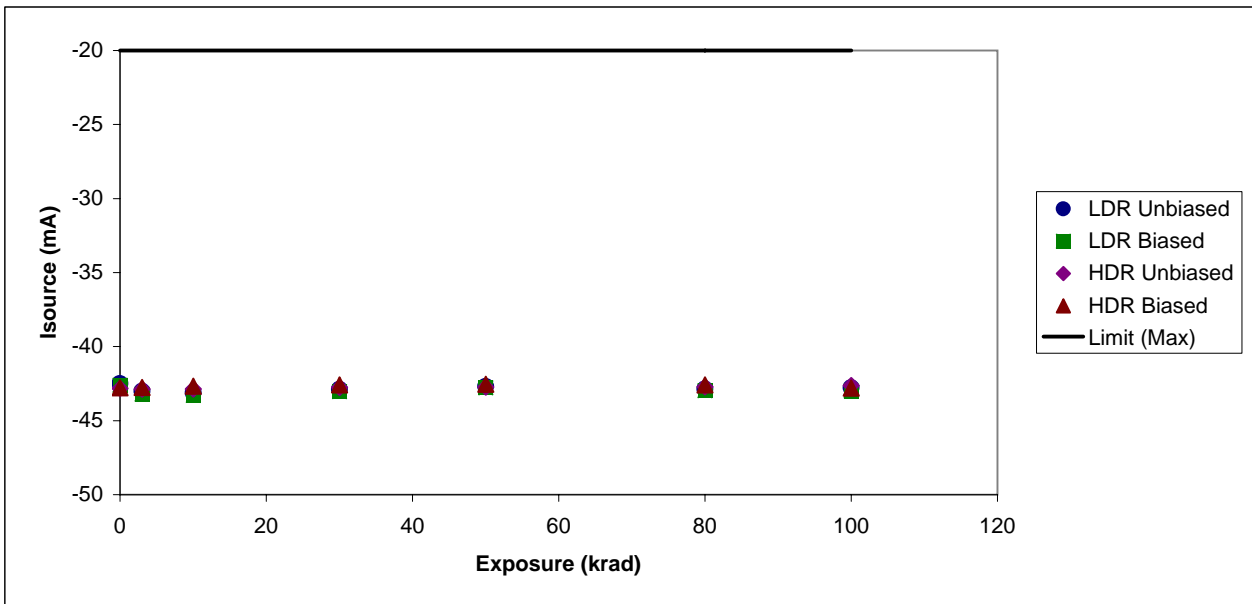
**TEST ID: 1012 Output Source Current; Isource**

+Vcc=15V, Vin=65mV, Vo=2V (mA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

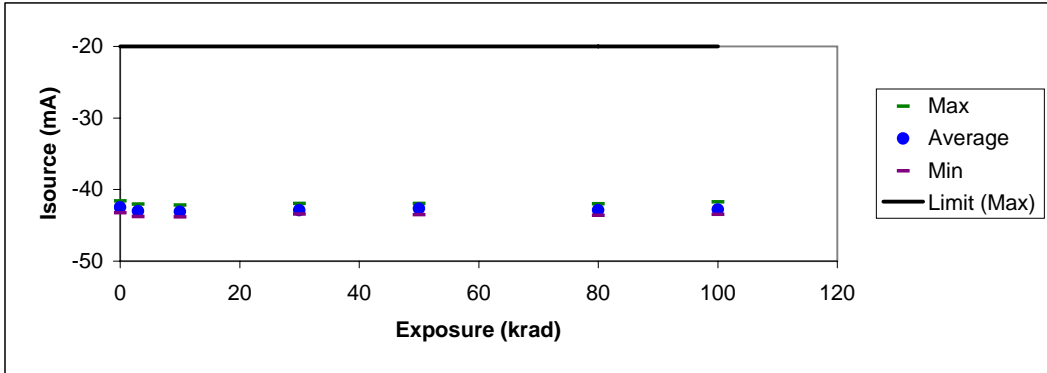
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-42.6186	-41.9607	-43.567	0.393918	-20	N/A	0	
LDR_BIAS	3	30	-43.2039	-42.3224	-43.7593	0.331911	-20	N/A	-0.554	6.17
LDR_BIAS	10	30	-43.2891	-42.809	-43.7962	0.282708	-20	N/A	-0.6713	-57.72
LDR_BIAS	30	30	-43.0439	-42.4607	-43.7137	0.282613	-20	N/A	-0.31594	-2.75
LDR_BIAS	50	30	-42.7733	-42.0413	-43.2538	0.329396	-20	N/A	-0.15085	-1.05
LDR_BIAS	80	30	-42.9832	-42.2433	-43.5586	0.368206	-20	N/A	-0.47935	-3.86
LDR_BIAS	100	30	-42.991	-42.2907	-43.762	0.400088	-20	N/A	-0.43934	-3.92
LDR_UNBIAS	0	30	-42.5104	-41.5936	-43.2625	0.444323	-20	N/A	0	
LDR_UNBIAS	3	30	-43.0107	-42.0596	-43.7784	0.411225	-20	N/A	-0.54646	6.38
LDR_UNBIAS	10	30	-43.1319	-42.1759	-43.8326	0.389504	-20	N/A	-0.65683	8.60
LDR_UNBIAS	30	30	-42.8964	-41.9717	-43.4283	0.351729	-20	N/A	-0.3475	-44.90
LDR_UNBIAS	50	30	-42.6847	-41.9324	-43.5122	0.385673	-20	N/A	-0.24401	-3.56
LDR_UNBIAS	80	30	-42.878	-42.0129	-43.6253	0.414813	-20	N/A	-0.41554	-2.80
LDR_UNBIAS	100	30	-42.7863	-41.7116	-43.4728	0.409285	-20	N/A	-0.26649	-1.42
HDR_BIAS	0	31	-42.7734	-42.1808	-43.6556	0.43596	-20	N/A	0	
HDR_BIAS	3	31	-42.7661	-41.8197	-43.5876	0.414037	-20	N/A	-0.08981	
HDR_BIAS	10	31	-42.669	-41.7365	-43.3859	0.390873	-20	N/A	0.01163	
HDR_BIAS	30	31	-42.5932	-41.6576	-43.3363	0.413645	-20	N/A	0.11469	
HDR_BIAS	50	31	-42.5368	-41.5913	-43.2772	0.4065	-20	N/A	0.14307	
HDR_BIAS	80	31	-42.5954	-41.8719	-43.4745	0.376209	-20	N/A	0.12421	
HDR_BIAS	100	31	-42.8078	-42.0953	-43.827	0.437754	-20	N/A	0.11197	
HDR_UNBIAS	0	30	-42.8254	-41.7964	-43.3299	0.438246	-20	N/A	0	
HDR_UNBIAS	3	30	-42.8743	-41.9675	-43.4798	0.441877	-20	N/A	-0.08571	
HDR_UNBIAS	10	30	-42.8696	-41.9527	-43.4912	0.446291	-20	N/A	-0.07641	
HDR_UNBIAS	30	30	-42.7633	-41.794	-43.4297	0.471846	-20	N/A	0.00774	
HDR_UNBIAS	50	30	-42.7292	-41.7402	-43.4319	0.466609	-20	N/A	0.06846	
HDR_UNBIAS	80	30	-42.7085	-41.7863	-43.4584	0.443751	-20	N/A	0.14826	
HDR_UNBIAS	100	30	-42.6308	-41.8734	-43.2274	0.380346	-20	N/A	0.18754	

Plot of the average readings for each radiation/bias condition

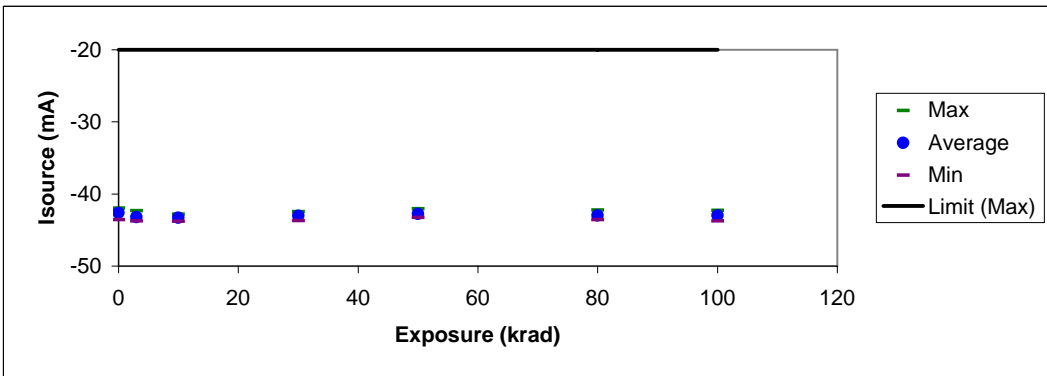


TEST ID: 1012 Output Source Current; I<sub>source</sub>

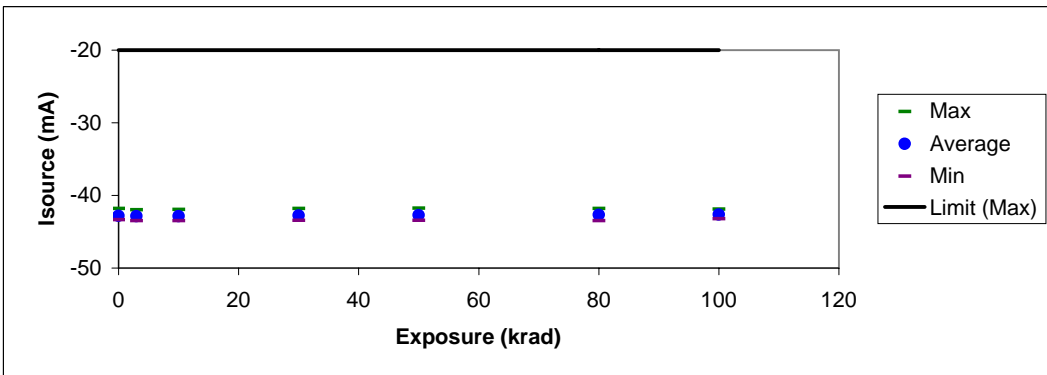
Low dose rate unbiased



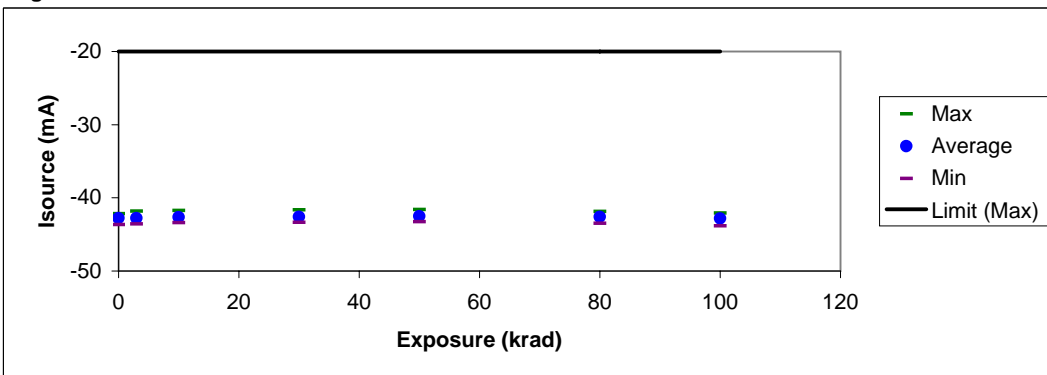
Low dose rate biased



High dose rate unbiased



High dose rate biased



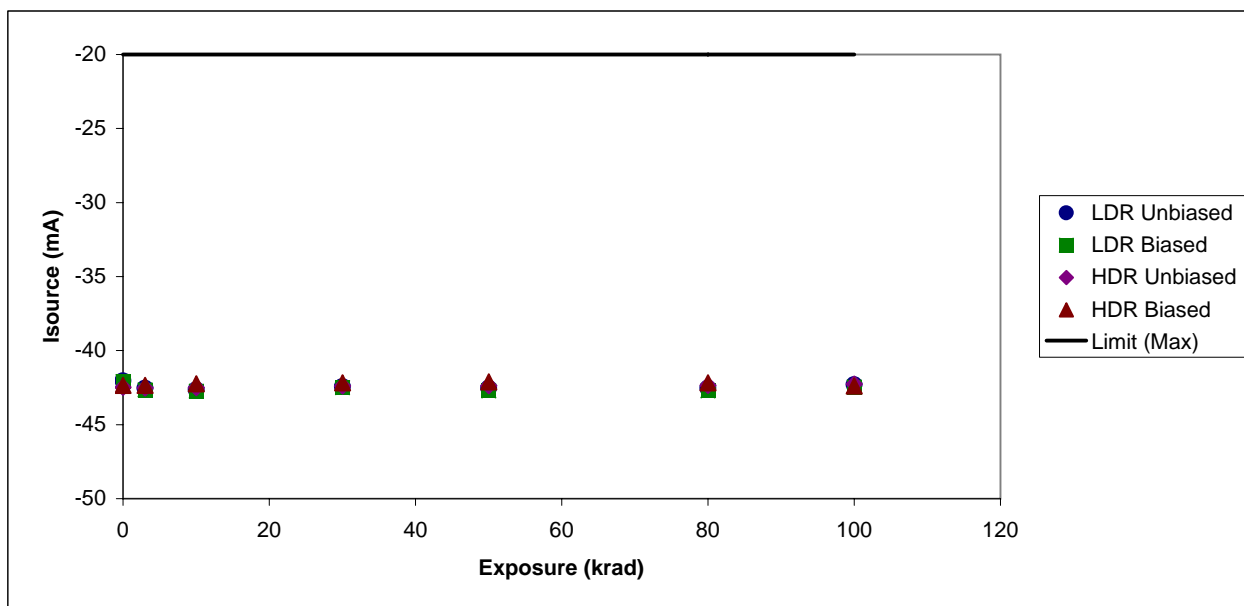
**TEST ID: 2012 Output Source Current; Isource**

+Vcc=15V, Vin=65mV, Vo=2V (mA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

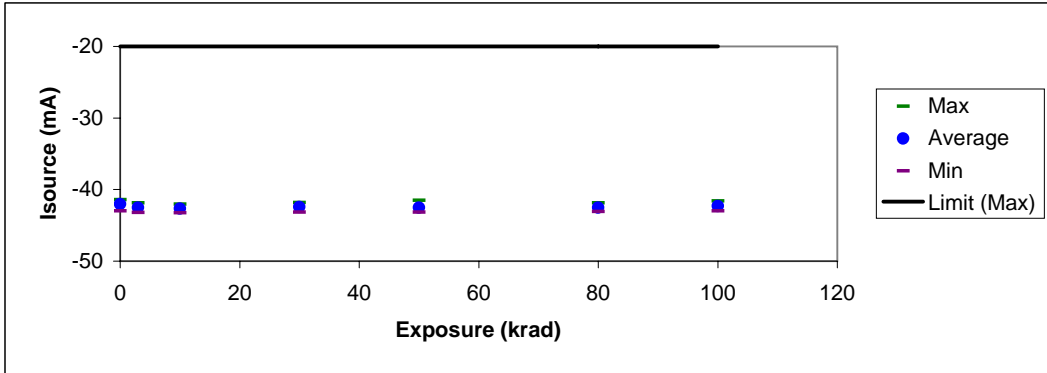
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	-42.0835	-41.2548	-42.6544	0.40593	-20	N/A	0	
LDR_BIASED	3	30	-42.6604	-42.0346	-43.2459	0.365641	-20	N/A	-0.54491	6.11
LDR_BIASED	10	30	-42.743	-42.1124	-43.2158	0.30911	-20	N/A	-0.67252	-71.02
LDR_BIASED	30	30	-42.5009	-41.9099	-42.9758	0.31123	-20	N/A	-0.30419	-2.58
LDR_BIASED	50	30	-42.7169	-42.1183	-43.408	0.311478	-20	N/A	-0.5806	-4.13
LDR_BIASED	80	30	-42.7117	-42.1111	-43.3173	0.297636	-20	N/A	-0.55533	-4.44
LDR_BIASED	100	30	-42.4488	-41.6214	-43.2674	0.459644	-20	N/A	-0.40636	-3.68
LDR_UNBIAS	0	30	-42.0456	-41.3951	-42.9944	0.438732	-20	N/A	0	
LDR_UNBIAS	3	30	-42.5377	-41.8671	-43.2044	0.389389	-20	N/A	-0.53257	6.24
LDR_UNBIAS	10	30	-42.6572	-42.0423	-43.2429	0.363238	-20	N/A	-0.64578	8.36
LDR_UNBIAS	30	30	-42.4249	-41.8378	-43.1611	0.332978	-20	N/A	-0.3436	-26.55
LDR_UNBIAS	50	30	-42.5496	-41.4864	-43.1706	0.390095	-20	N/A	-0.44763	-5.86
LDR_UNBIAS	80	30	-42.539	-41.8422	-43.0752	0.375693	-20	N/A	-0.46958	-2.98
LDR_UNBIAS	100	30	-42.313	-41.5762	-42.9862	0.3982	-20	N/A	-0.26421	-1.39
HDR_BIASED	0	31	-42.3532	-41.6431	-43.2147	0.453176	-20	N/A	0	
HDR_BIASED	3	31	-42.3457	-41.8034	-42.9923	0.338479	-20	N/A	-0.0892	
HDR_BIASED	10	31	-42.2473	-41.7898	-42.834	0.303164	-20	N/A	0.00947	
HDR_BIASED	30	31	-42.1712	-41.6679	-42.7613	0.318317	-20	N/A	0.11784	
HDR_BIASED	50	31	-42.1131	-41.6238	-42.7643	0.311406	-20	N/A	0.14043	
HDR_BIASED	80	31	-42.171	-41.7239	-42.9351	0.306373	-20	N/A	0.12514	
HDR_BIASED	100	31	-42.3817	-41.597	-43.3997	0.448744	-20	N/A	0.11038	
HDR_UNBIAS	0	30	-42.4678	-41.6226	-42.8771	0.343711	-20	N/A	0	
HDR_UNBIAS	3	30	-42.5163	-41.8197	-43.0809	0.361504	-20	N/A	-0.08533	
HDR_UNBIAS	10	30	-42.5103	-41.8276	-43.0866	0.364991	-20	N/A	-0.07722	
HDR_UNBIAS	30	30	-42.4026	-41.6626	-43.0719	0.396805	-20	N/A	0.01294	
HDR_UNBIAS	50	30	-42.3668	-41.6835	-43.0516	0.380723	-20	N/A	0.07635	
HDR_UNBIAS	80	30	-42.3441	-41.7154	-43.0097	0.35564	-20	N/A	0.15744	
HDR_UNBIAS	100	30	-42.2672	-41.6785	-42.8174	0.311611	-20	N/A	0.19057	

Plot of the average readings for each radiation/bias condition

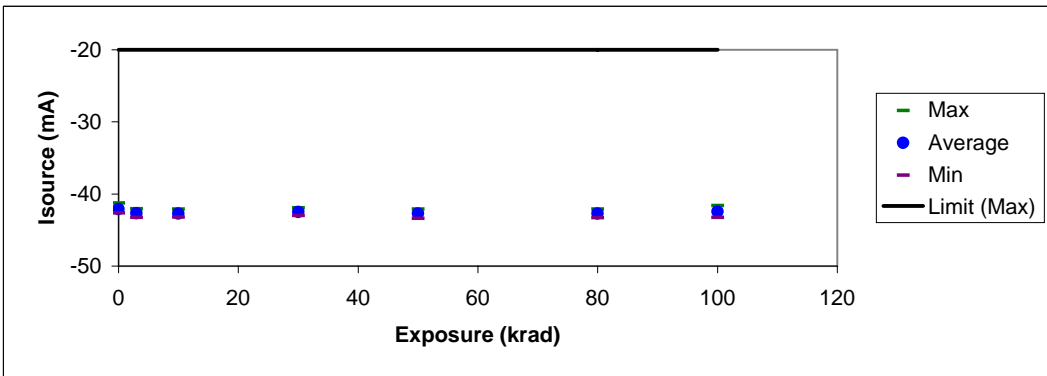


TEST ID: 2012 Output Source Current; I<sub>source</sub>

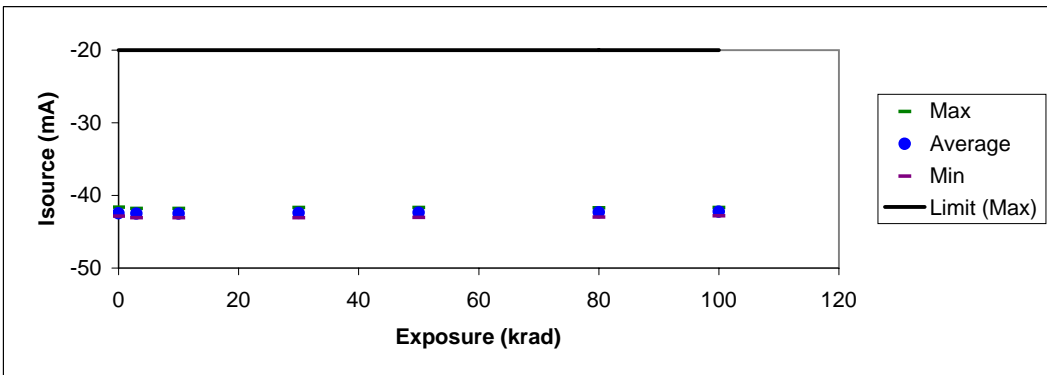
Low dose rate unbiased



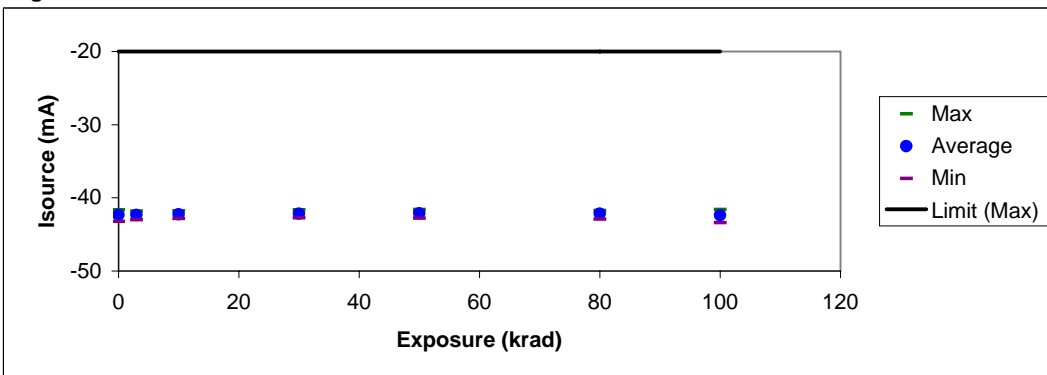
Low dose rate biased



High dose rate unbiased



High dose rate biased



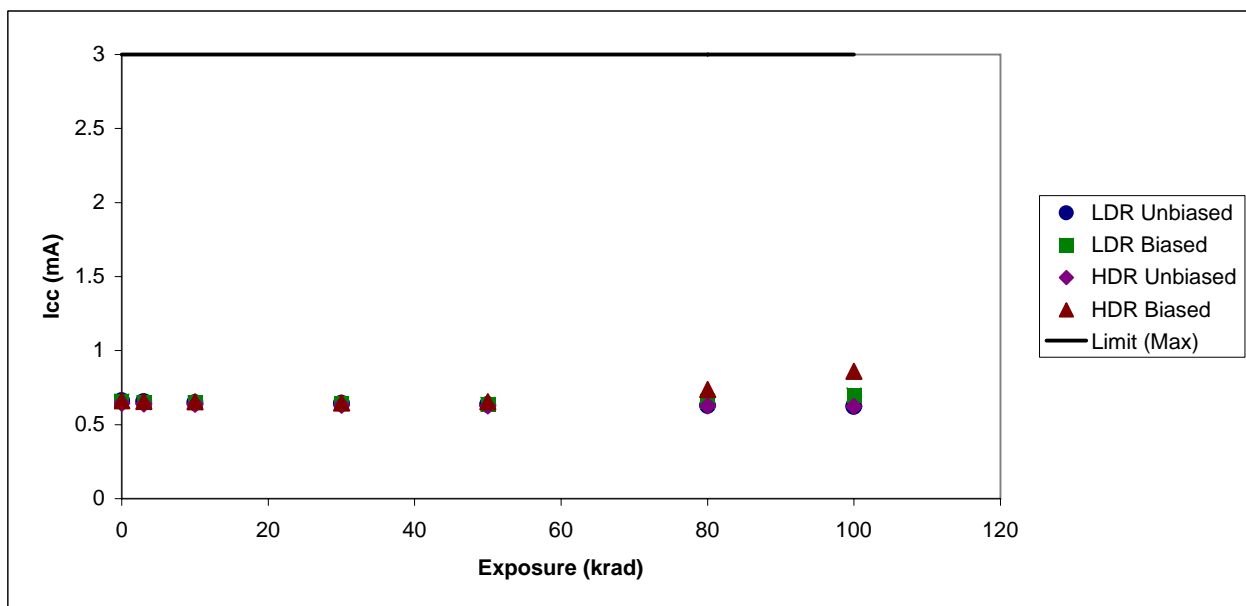
**TEST ID: 13 Supply Current; Icc**

Vcc=30V, Vo=1.4V, RL=100K (mA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

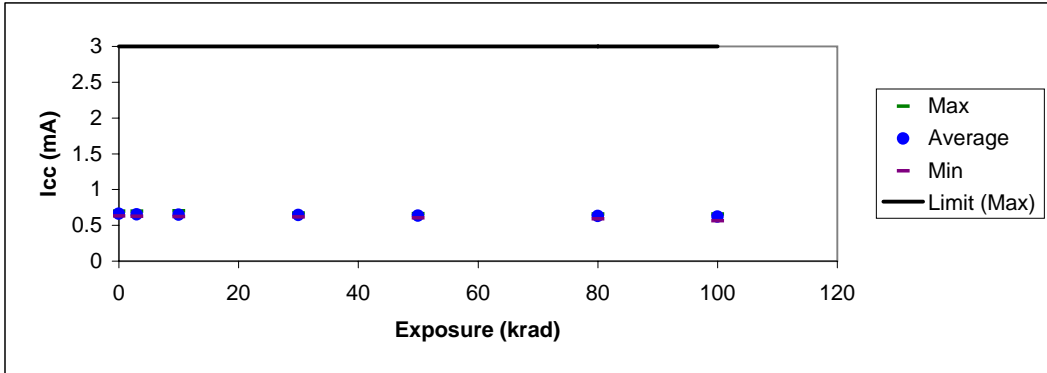
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	0.658473	0.698686	0.630602	0.0166142	3	N/A	0	
LDR_BIASED	3	30	0.647723	0.67838	0.621046	0.0167792	3	N/A	-0.01075	2.25
LDR_BIASED	10	30	0.647643	0.679575	0.612685	0.0154786	3	N/A	-0.01075	1.80
LDR_BIASED	30	30	0.641511	0.668825	0.604324	0.0160797	3	N/A	-0.01433	1.33
LDR_BIASED	50	30	0.636734	0.680769	0.606713	0.018106	3	N/A	-0.0209	1.59
LDR_BIASED	80	30	0.659108	0.803549	0.598352	0.0536506	3	N/A	-0.01792	-1.67
LDR_BIASED	100	30	0.700147	0.969329	0.617463	0.103274	3	N/A	0.00836	0.14
LDR_UNBIAS	0	30	0.660583	0.698686	0.630602	0.0179795	3	N/A	0	
LDR_UNBIAS	3	30	0.65477	0.698686	0.625824	0.020299	3	N/A	-0.00119	0.50
LDR_UNBIAS	10	30	0.64824	0.699881	0.622241	0.019781	3	N/A	-0.01553	3.25
LDR_UNBIAS	30	30	0.643542	0.668825	0.617463	0.0142994	3	N/A	-0.01672	1.47
LDR_UNBIAS	50	30	0.636136	0.660463	0.604324	0.0152142	3	N/A	-0.02389	1.38
LDR_UNBIAS	80	30	0.62889	0.658075	0.592379	0.0150523	3	N/A	-0.03464	2.15
LDR_UNBIAS	100	30	0.622082	0.655686	0.563712	0.0199618	3	N/A	-0.03524	1.64
HDR_BIASED	0	31	0.661931	0.686212	0.639625	0.0132496	3	N/A	0	
HDR_BIASED	3	31	0.657461	0.700376	0.627512	0.0177563	3	N/A	-0.00478	
HDR_BIASED	10	31	0.653955	0.678876	0.625123	0.0155045	3	N/A	-0.00597	
HDR_BIASED	30	31	0.646749	0.676486	0.613345	0.0166336	3	N/A	-0.01075	
HDR_BIASED	50	31	0.655535	0.707713	0.615734	0.0197379	3	N/A	-0.01314	
HDR_BIASED	80	31	0.736052	1.04244	0.63229	0.12921	3	N/A	0.01075	
HDR_BIASED	100	31	0.860283	1.49704	0.649181	0.270504	3	N/A	0.05828	
HDR_UNBIAS	0	30	0.643223	0.698686	0.603129	0.0205638	3	N/A	0	
HDR_UNBIAS	3	30	0.640556	0.668825	0.61388	0.0158473	3	N/A	-0.00239	
HDR_UNBIAS	10	30	0.637172	0.661658	0.606713	0.0151535	3	N/A	-0.00478	
HDR_UNBIAS	30	30	0.631478	0.664047	0.603129	0.0173715	3	N/A	-0.01135	
HDR_UNBIAS	50	30	0.627536	0.668825	0.603129	0.0146985	3	N/A	-0.01732	
HDR_UNBIAS	80	30	0.627098	0.664047	0.592379	0.0170428	3	N/A	-0.01613	
HDR_UNBIAS	100	30	0.622161	0.660463	0.582824	0.0202729	3	N/A	-0.0215	

Plot of the average readings for each radiation/bias condition

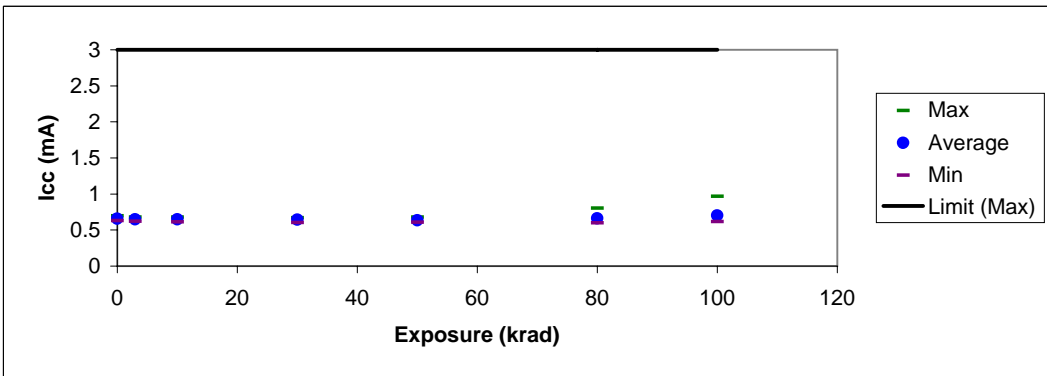


TEST ID: 13 Supply Current; I<sub>cc</sub>

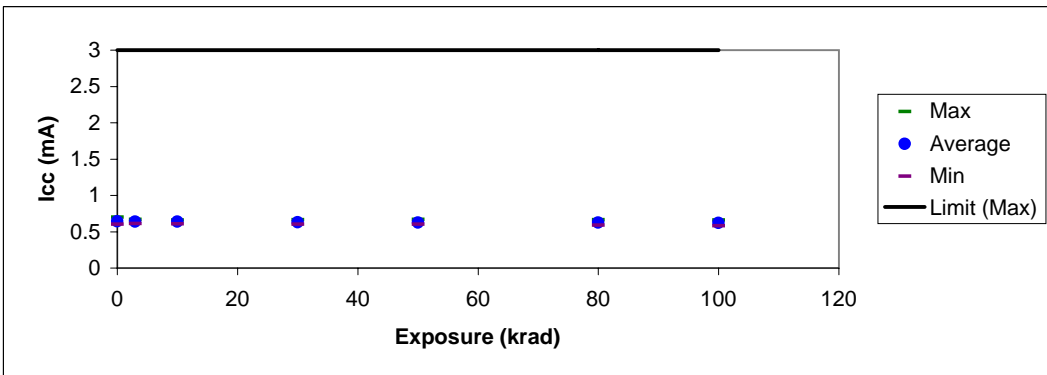
Low dose rate unbiased



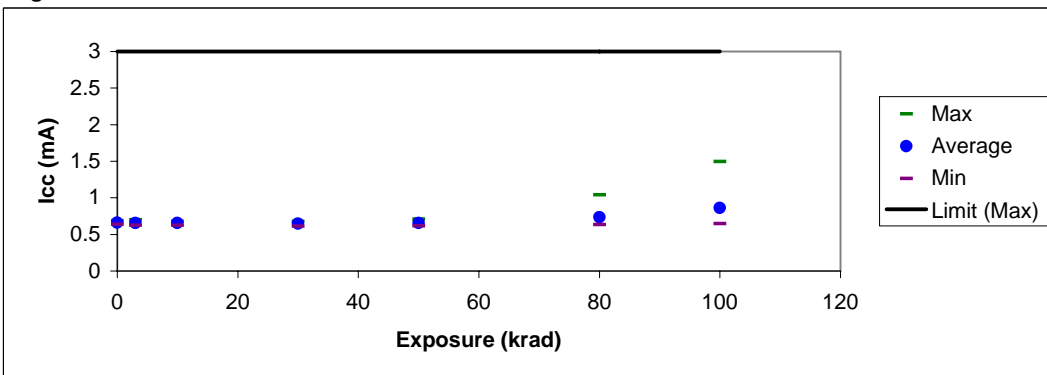
Low dose rate biased



High dose rate unbiased



High dose rate biased



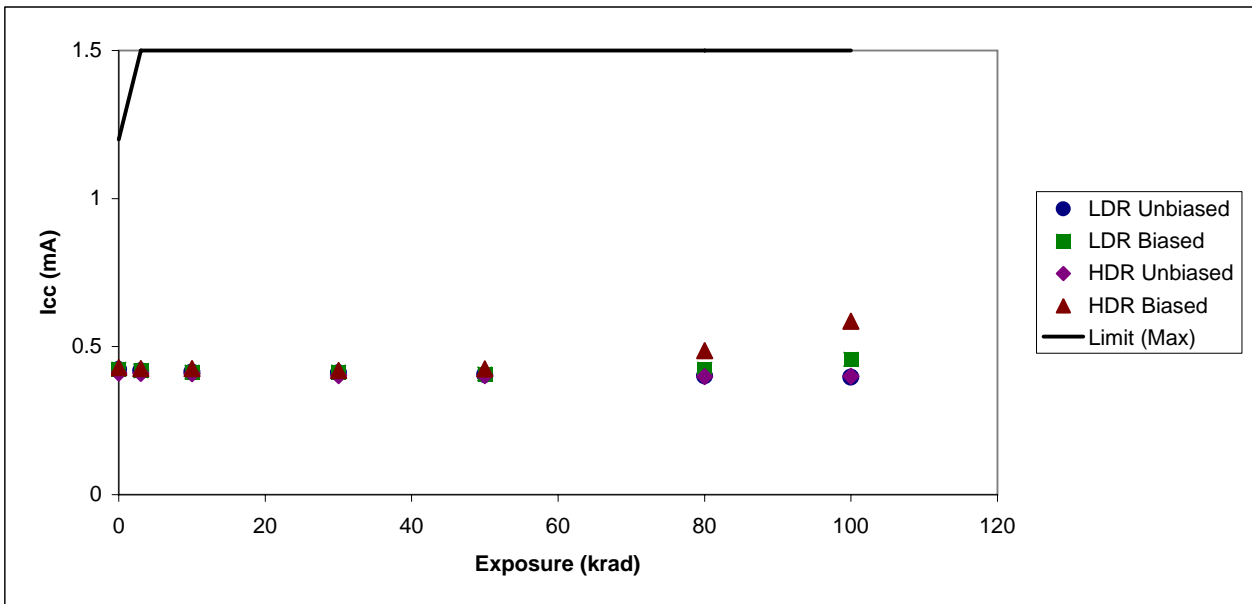
**TEST ID: 14 Supply Current; Icc**

Vcc=5V, Vo=1.4V, RL=100K (mA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

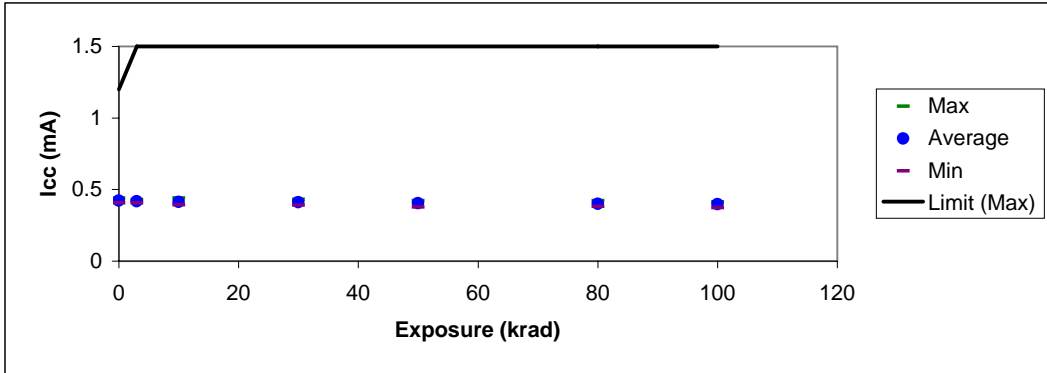
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	0.423363	0.439489	0.401266	0.00797729	1.2	N/A	0	
LDR_BIAS	3	30	0.418227	0.429933	0.401266	0.00733908	1.5	N/A	-0.00478	
LDR_BIAS	10	30	0.413688	0.432322	0.401266	0.00809272	1.5	N/A	-0.00956	
LDR_BIAS	30	30	0.413569	0.426349	0.394099	0.00783667	1.5	N/A	-0.01314	1.37
LDR_BIAS	50	30	0.407557	0.421572	0.392905	0.00837553	1.5	N/A	-0.01732	3.62
LDR_BIAS	80	30	0.423682	0.530267	0.392905	0.0420082	1.5	N/A	-0.01493	-4.17
LDR_BIAS	100	30	0.456609	0.668825	0.388127	0.084821	1.5	N/A	0.00478	0.10
LDR_UNBIAS	0	30	0.422806	0.439489	0.407238	0.00787633	1.2	N/A	0	
LDR_UNBIAS	3	30	0.418546	0.429933	0.407238	0.00724688	1.5	N/A	-0.00119	
LDR_UNBIAS	10	30	0.414126	0.439489	0.392905	0.00998709	1.5	N/A	-0.00836	
LDR_UNBIAS	30	30	0.411339	0.432322	0.39171	0.00929301	1.5	N/A	-0.01194	1.18
LDR_UNBIAS	50	30	0.40477	0.421572	0.377377	0.0105068	1.5	N/A	-0.01911	2.29
LDR_UNBIAS	80	30	0.40043	0.421572	0.383349	0.00802283	1.5	N/A	-0.0209	2.06
LDR_UNBIAS	100	30	0.396846	0.41321	0.373793	0.0106242	1.5	N/A	-0.02389	2.50
HDR_BIAS	0	31	0.429039	0.481947	0.412502	0.0122551	1.2	N/A	0	
HDR_BIAS	3	31	0.425918	0.438944	0.412502	0.00803889	1.5	N/A	0	
HDR_BIAS	10	31	0.425687	0.454473	0.402946	0.0101467	1.5	N/A	0	
HDR_BIAS	30	31	0.419676	0.455504	0.402946	0.00939551	1.5	N/A	-0.00956	
HDR_BIAS	50	31	0.424646	0.468643	0.398168	0.0149015	1.5	N/A	-0.00478	
HDR_BIAS	80	31	0.48672	0.761043	0.410275	0.113616	1.5	N/A	0.00358	
HDR_BIAS	100	31	0.585482	1.13441	0.419832	0.227351	1.5	N/A	0.04897	
HDR_UNBIAS	0	30	0.4111	0.429933	0.392905	0.0101677	1.2	N/A	0	
HDR_UNBIAS	3	30	0.409508	0.429933	0.394099	0.00943312	1.5	N/A	0	
HDR_UNBIAS	10	30	0.408034	0.421572	0.392905	0.00735868	1.5	N/A	0	
HDR_UNBIAS	30	30	0.401704	0.421572	0.384544	0.00882486	1.5	N/A	-0.01015	
HDR_UNBIAS	50	30	0.401664	0.410822	0.383349	0.00782526	1.5	N/A	-0.00836	
HDR_UNBIAS	80	30	0.398519	0.410822	0.382154	0.00711959	1.5	N/A	-0.01015	
HDR_UNBIAS	100	30	0.399355	0.412016	0.383349	0.00699725	1.5	N/A	-0.00956	

Plot of the average readings for each radiation/bias condition

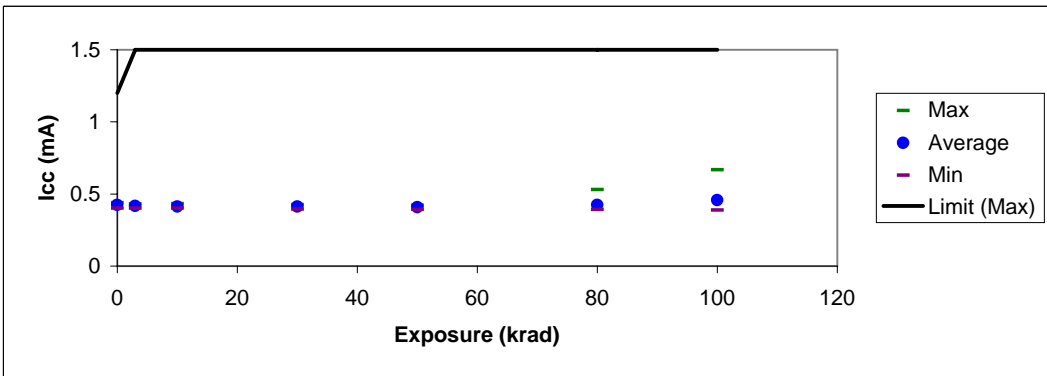


TEST ID: 14 Supply Current; Icc

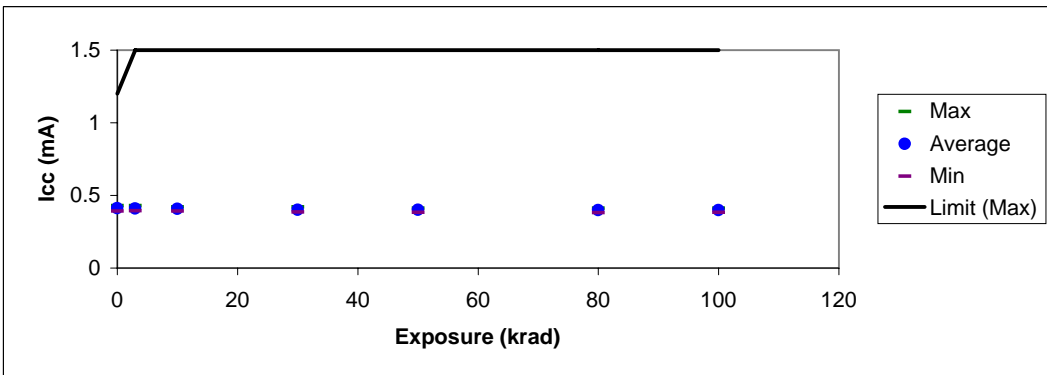
Low dose rate unbiased



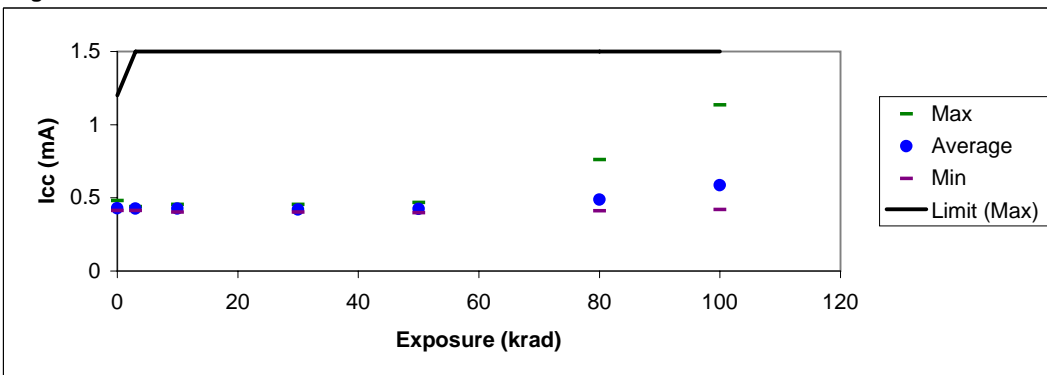
Low dose rate biased



High dose rate unbiased



High dose rate biased



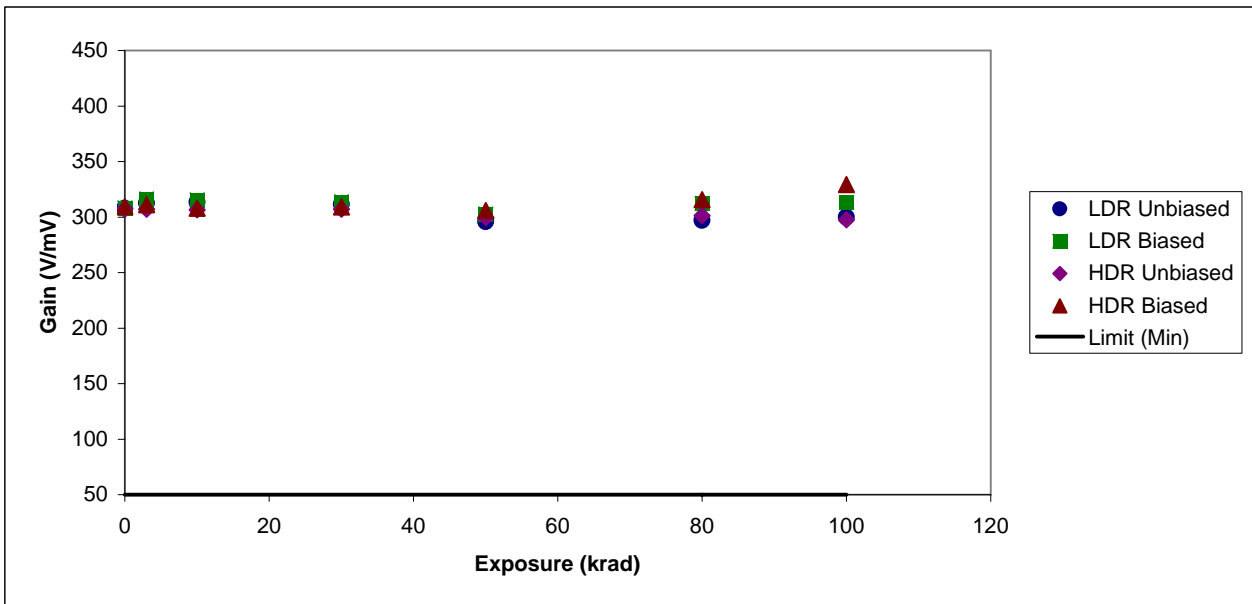
**TEST ID: 1015 Large Signal Gain; Avs**

+Vcc=15V, RL=2K, Vo=1 to 11V (V/mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

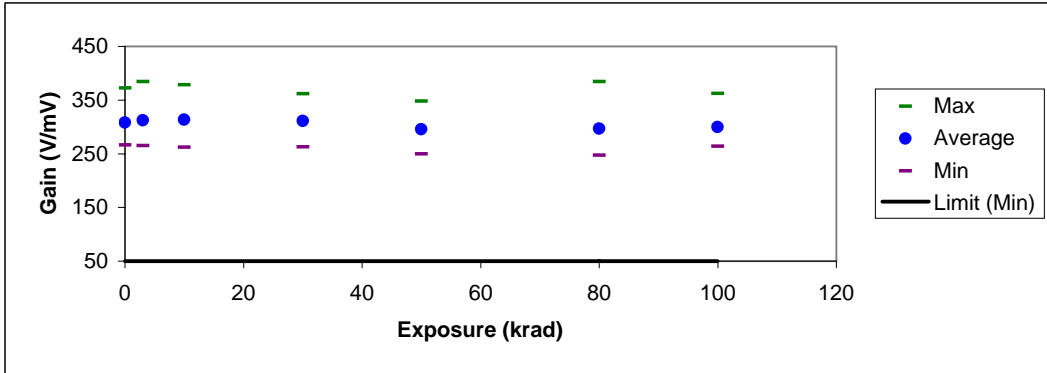
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	308.246	345.873	270.143	19.7784	N/A	50	0	
LDR_BIASED	3	30	316.267	361.376	284.435	18.7948	N/A	50	5.18886	1.53
LDR_BIASED	10	30	315.295	352.82	286.403	18.6119	N/A	50	8.26945	-3.89
LDR_BIASED	30	30	313.749	368.594	275.385	21.2079	N/A	50	6.2061	-2.51
LDR_BIASED	50	30	302.658	356.132	264.794	21.369	N/A	50	-9.36237	2.97
LDR_BIASED	80	30	312.15	378.523	253.423	26.9363	N/A	50	1.75037	-6.54
LDR_BIASED	100	30	313.208	373.642	283.904	24.3237	N/A	50	-3.29688	-0.37
LDR_UNBIAS	0	30	307.936	372.756	266.189	23.8709	N/A	50	0	
LDR_UNBIAS	3	30	312.438	384.308	264.981	27.8283	N/A	50	1.93546	-0.51
LDR_UNBIAS	10	30	313.327	378.528	262.011	26.2378	N/A	50	5.74969	-1.43
LDR_UNBIAS	30	30	311.26	361.574	262.836	24.3336	N/A	50	-0.06885	0.04
LDR_UNBIAS	50	30	295.871	347.842	249.685	22.7572	N/A	50	-3.72772	0.56
LDR_UNBIAS	80	30	296.982	384.72	247.178	27.2445	N/A	50	-5.53661	1.20
LDR_UNBIAS	100	30	299.981	362.085	264.025	24.1994	N/A	50	-3.73483	0.48
HDR_BIASED	0	31	309.364	384.436	273.802	23.4625	N/A	50	0	
HDR_BIASED	3	31	311.229	412.418	271.859	26.5192	N/A	50	3.3952	
HDR_BIASED	10	31	307.924	397.794	269.894	23.0674	N/A	50	-2.12793	
HDR_BIASED	30	31	309.146	387.854	275.965	25.2438	N/A	50	-2.47372	
HDR_BIASED	50	31	305.779	357.488	271.418	19.5867	N/A	50	-3.15643	
HDR_BIASED	80	31	315.629	389.665	283.089	24.4148	N/A	50	-0.26749	
HDR_BIASED	100	31	329.244	441.434	279.334	38.8541	N/A	50	9.00482	
HDR_UNBIAS	0	30	307.313	353.165	269.09	21.229	N/A	50	0	
HDR_UNBIAS	3	30	307.204	358.194	273.543	22.7396	N/A	50	-3.79565	
HDR_UNBIAS	10	30	306.425	342.185	275.511	17.6209	N/A	50	-4.01411	
HDR_UNBIAS	30	30	306.93	373.833	266.366	23.2297	N/A	50	-1.91675	
HDR_UNBIAS	50	30	299.529	345.537	264.544	20.2561	N/A	50	-6.61769	
HDR_UNBIAS	80	30	301.338	356.745	266.228	25.4476	N/A	50	-4.62012	
HDR_UNBIAS	100	30	297.64	355.925	255.703	21.5617	N/A	50	-7.84375	

Plot of the average readings for each radiation/bias condition

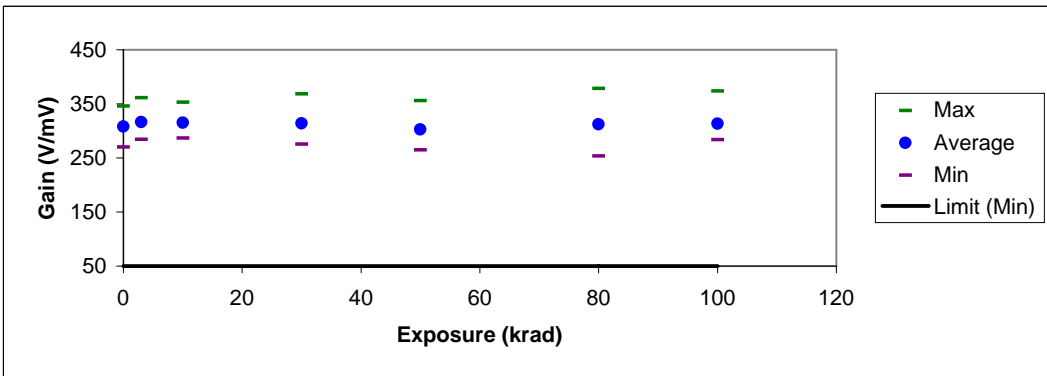


TEST ID: 1015 Large Signal Gain; Avs

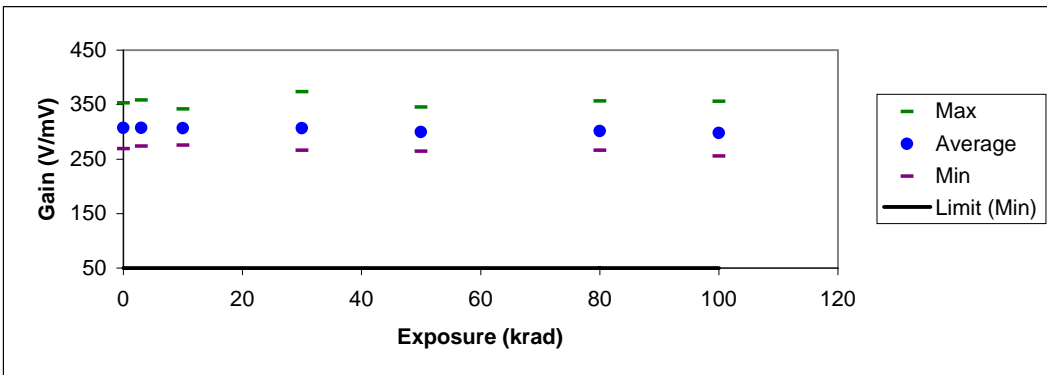
Low dose rate unbiased



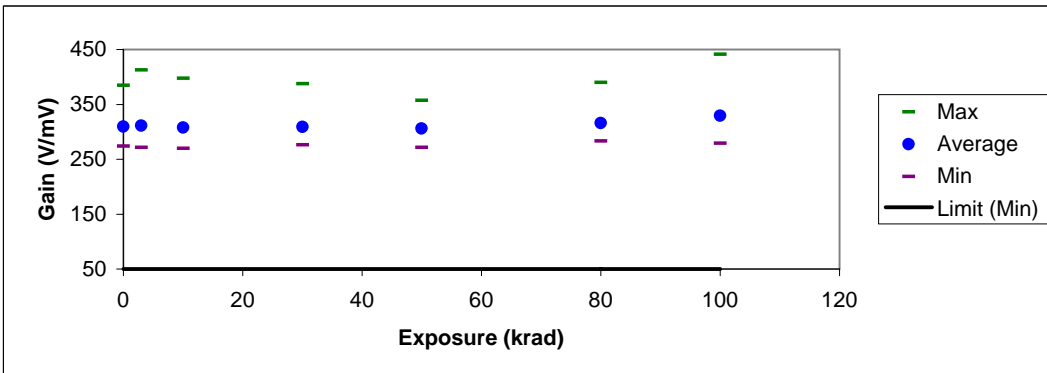
Low dose rate biased



High dose rate unbiased



High dose rate biased

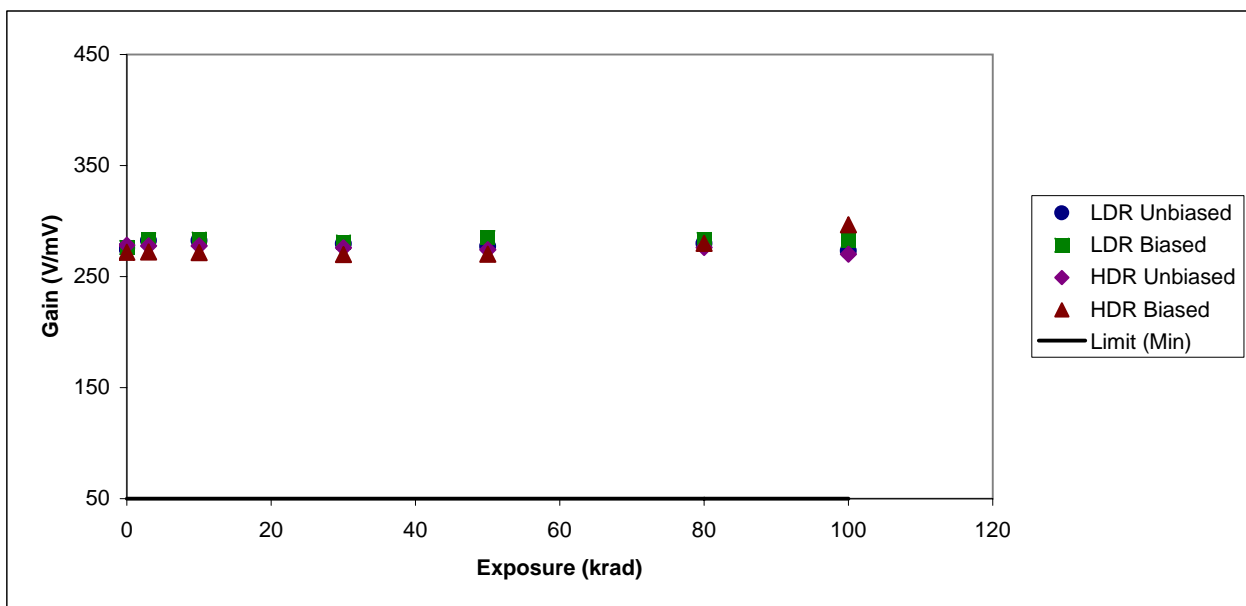


**TEST ID: 2015 Large Signal Gain; Avs**

+Vcc=15V, RL=2K, Vo=1 to 11V (V/mV)  
 LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

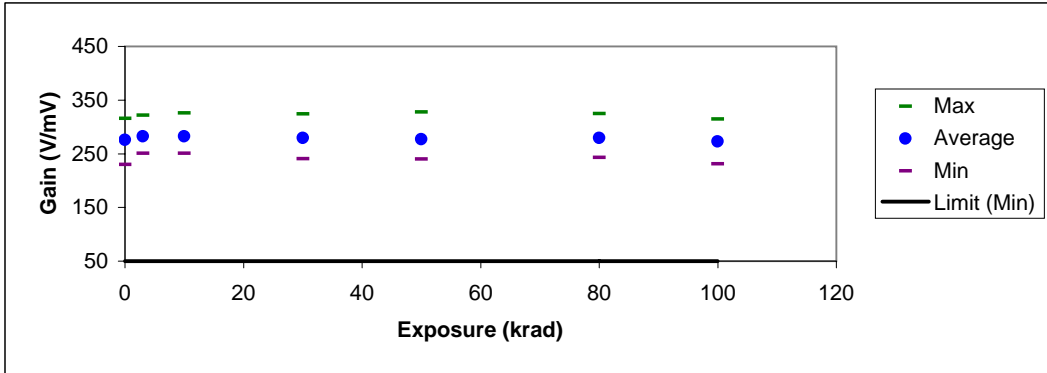
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	276.353	313.112	247.917	18.2184	N/A	50	0	
LDR_BIASED	3	30	283.264	329.563	252.715	20.4591	N/A	50	6.45461	12.08
LDR_BIASED	10	30	283.664	330.656	250.43	21.8822	N/A	50	8.10983	18.65
LDR_BIASED	30	30	281.176	333.036	246.149	21.8445	N/A	50	5.36125	-3.18
LDR_BIASED	50	30	285.027	313.099	258.791	15.772	N/A	50	12.1833	25.22
LDR_BIASED	80	30	283.519	346.382	249.699	20.9888	N/A	50	9.34909	24.77
LDR_BIASED	100	30	282.858	375.298	235.629	27.0375	N/A	50	9.23776	1.80
LDR_UNBIAS	0	30	275.698	315.805	229.76	20.671	N/A	50	0	
LDR_UNBIAS	3	30	282.372	322.113	250.633	19.7642	N/A	50	6.23166	-6.14
LDR_UNBIAS	10	30	282.194	326.266	251.166	18.424	N/A	50	6.62595	-8.83
LDR_UNBIAS	30	30	279.536	324.421	240.739	20.4028	N/A	50	4.1579	-1.67
LDR_UNBIAS	50	30	277.042	327.717	239.966	18.5669	N/A	50	4.16879	-0.82
LDR_UNBIAS	80	30	279.722	324.782	243.244	22.443	N/A	50	3.20906	-1.02
LDR_UNBIAS	100	30	273.05	314.551	231.189	20.5574	N/A	50	-4.36366	0.60
HDR_BIASED	0	31	271.939	312.617	227.228	20.0305	N/A	50	0	
HDR_BIASED	3	31	272.245	329.383	229.837	23.8629	N/A	50	0.5345	
HDR_BIASED	10	31	271.508	319.02	227.663	21.4352	N/A	50	0.43481	
HDR_BIASED	30	31	269.762	315.978	225.463	21.9451	N/A	50	-1.68713	
HDR_BIASED	50	31	270.245	328.147	227.711	23.146	N/A	50	0.48306	
HDR_BIASED	80	31	279.871	365.747	227.097	34.7469	N/A	50	0.37744	
HDR_BIASED	100	31	296.56	437.948	227.934	57.2984	N/A	50	5.13988	
HDR_UNBIAS	0	30	278.331	338.088	227.9	23.4085	N/A	50	0	
HDR_UNBIAS	3	30	277.581	317.516	233.342	22.1456	N/A	50	-1.0154	
HDR_UNBIAS	10	30	277.749	323.837	249.876	18.5113	N/A	50	-0.75024	
HDR_UNBIAS	30	30	276.033	326.265	236.432	22.3008	N/A	50	-2.48491	
HDR_UNBIAS	50	30	274.124	323.49	234.678	22.6048	N/A	50	-5.07671	
HDR_UNBIAS	80	30	276.128	324.024	235.191	19.8934	N/A	50	-3.16113	
HDR_UNBIAS	100	30	270.227	311.437	231.579	21.609	N/A	50	-7.23759	

Plot of the average readings for each radiation/bias condition

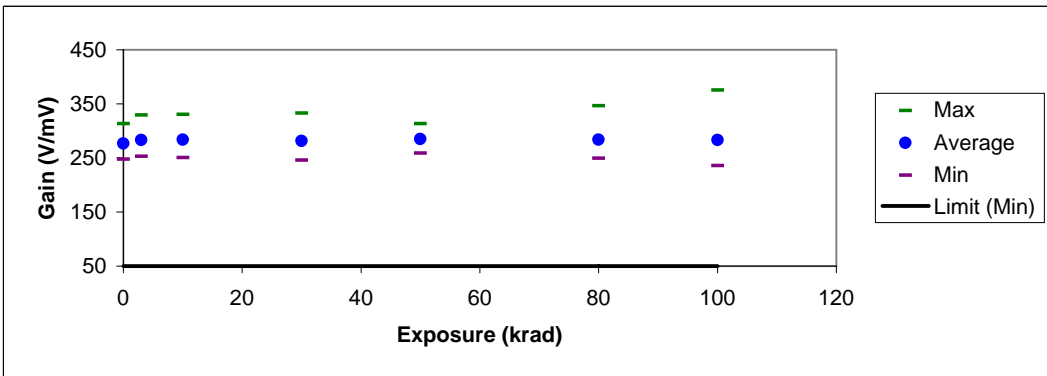


TEST ID: 2015 Large Signal Gain; Avs

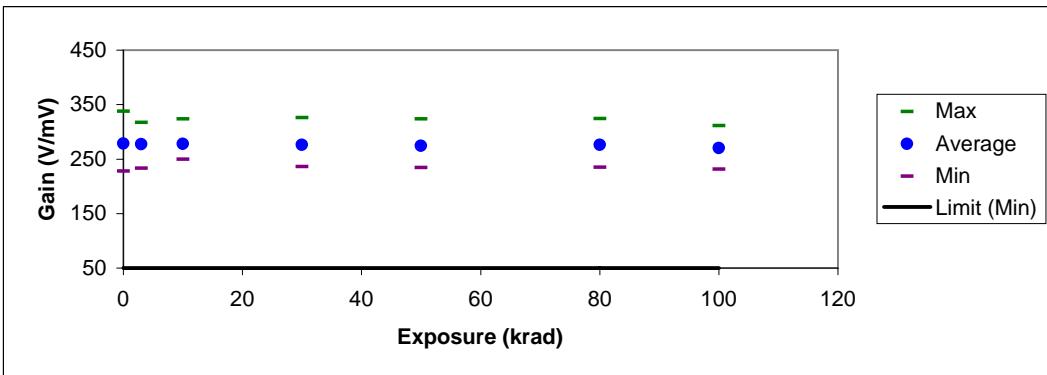
Low dose rate unbiased



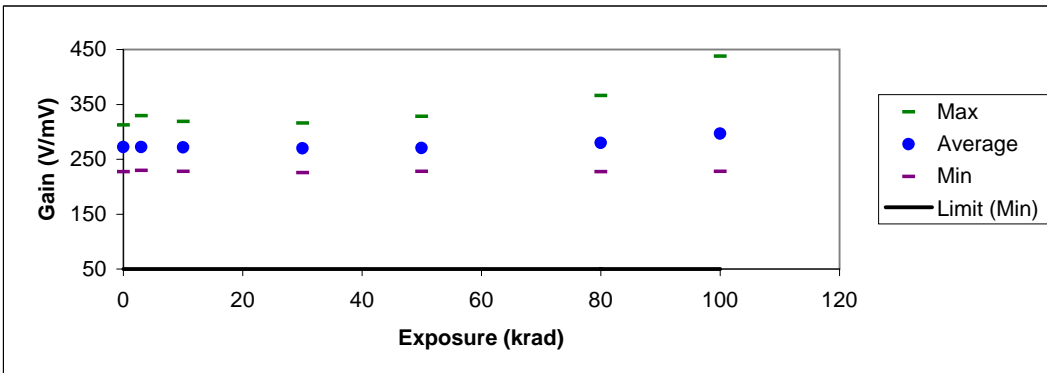
Low dose rate biased



High dose rate unbiased



High dose rate biased



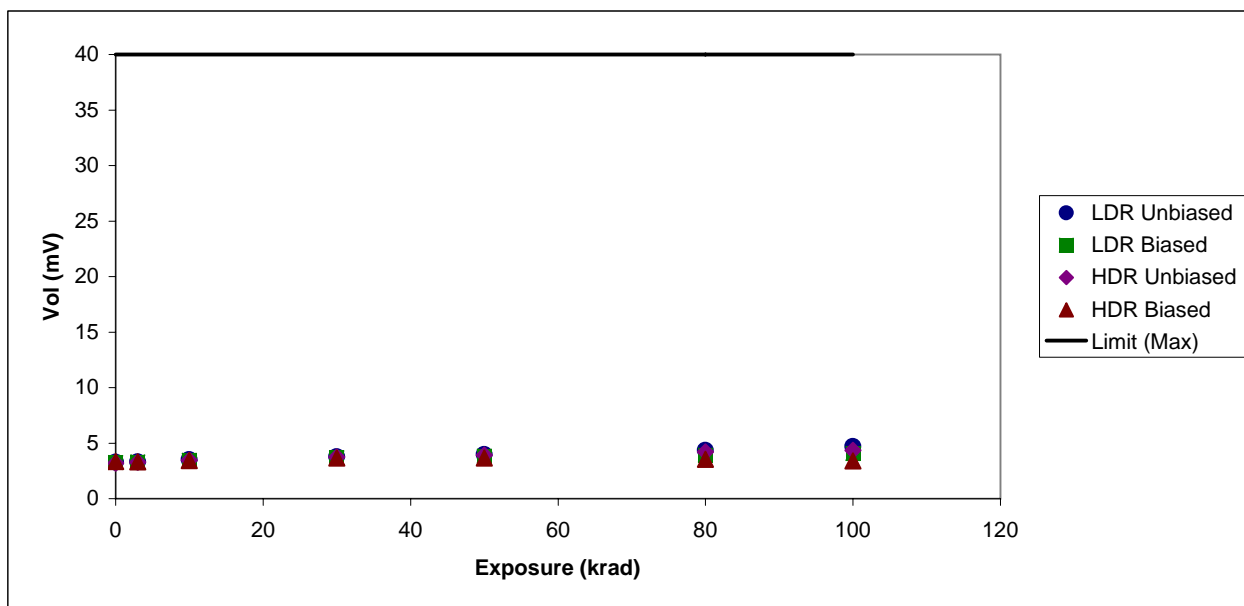
**TEST ID: 1016 Output Voltage Low; Vol**

Isink=1uA (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

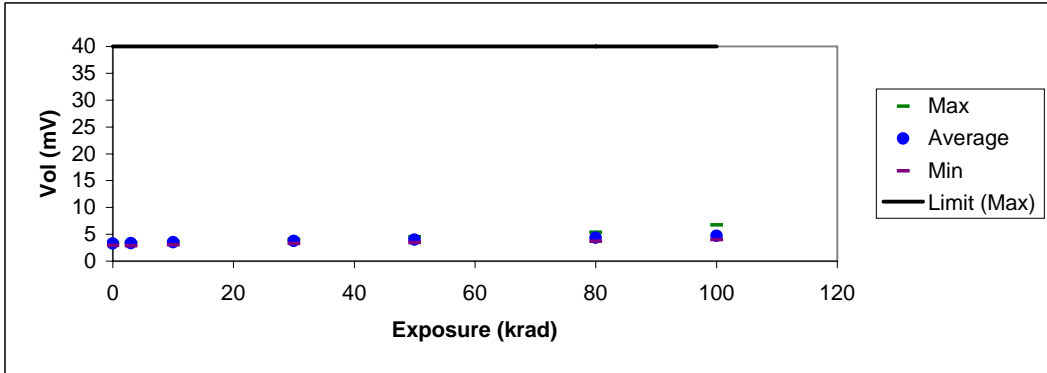
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	3.24687	3.37315	2.81512	0.122201	40	N/A	0	
LDR_BIAS	3	30	3.30893	3.41616	2.89157	0.121488	40	N/A	0.07261	2.06
LDR_BIAS	10	30	3.46461	3.71429	3.03492	0.145491	40	N/A	0.2262	1.34
LDR_BIAS	30	30	3.67581	3.92452	3.22554	0.165435	40	N/A	0.43072	1.26
LDR_BIAS	50	30	3.81888	4.13426	3.17776	0.236245	40	N/A	0.59293	1.29
LDR_BIAS	80	30	3.91207	4.55133	2.76018	0.5415	40	N/A	0.74915	1.70
LDR_BIAS	100	30	4.06731	4.95219	2.70284	0.677913	40	N/A	0.87288	3.71
LDR_UNBIAS	0	30	3.28601	3.47538	2.89157	0.101778	40	N/A	0	
LDR_UNBIAS	3	30	3.32526	3.45388	2.87485	0.0985984	40	N/A	0.03942	0.44
LDR_UNBIAS	10	30	3.50525	3.63545	3.03492	0.110289	40	N/A	0.21212	0.79
LDR_UNBIAS	30	30	3.76766	4.06497	3.30148	0.171154	40	N/A	0.53465	1.04
LDR_UNBIAS	50	30	3.97993	4.5131	3.48016	0.21831	40	N/A	0.69779	1.09
LDR_UNBIAS	80	30	4.34061	5.3626	3.68323	0.389831	40	N/A	1.01383	1.10
LDR_UNBIAS	100	30	4.70585	6.70751	4.01002	0.619147	40	N/A	1.33321	1.22
HDR_BIAS	0	31	3.3401	4.59515	2.86503	0.311123	40	N/A	0	
HDR_BIAS	3	31	3.30394	3.44455	2.88175	0.106422	40	N/A	0.03533	
HDR_BIAS	10	31	3.43702	3.58134	3.03465	0.105635	40	N/A	0.16911	
HDR_BIAS	30	31	3.6496	3.92536	3.17987	0.158345	40	N/A	0.34062	
HDR_BIAS	50	31	3.66928	4.05751	2.90326	0.341767	40	N/A	0.46007	
HDR_BIAS	80	31	3.55003	4.23857	2.45224	0.549355	40	N/A	0.44095	
HDR_BIAS	100	31	3.40666	4.16324	2.41401	0.527544	40	N/A	0.2355	
HDR_UNBIAS	0	30	3.20717	3.36838	2.75779	0.156207	40	N/A	0	
HDR_UNBIAS	3	30	3.29278	3.44483	2.80079	0.16752	40	N/A	0.09028	
HDR_UNBIAS	10	30	3.45154	3.69517	3.00864	0.165294	40	N/A	0.26801	
HDR_UNBIAS	30	30	3.75441	4.09364	3.36599	0.175473	40	N/A	0.51648	
HDR_UNBIAS	50	30	3.91041	4.36071	3.50166	0.213305	40	N/A	0.63926	
HDR_UNBIAS	80	30	4.21004	4.78973	3.75012	0.265382	40	N/A	0.91947	
HDR_UNBIAS	100	30	4.36416	4.94263	3.95985	0.280849	40	N/A	1.09336	

Plot of the average readings for each radiation/bias condition

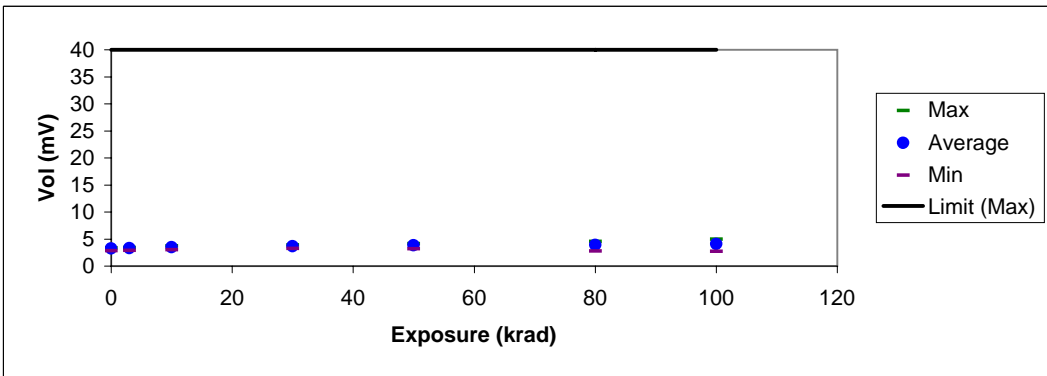


TEST ID: 1016 Output Voltage Low; Vol

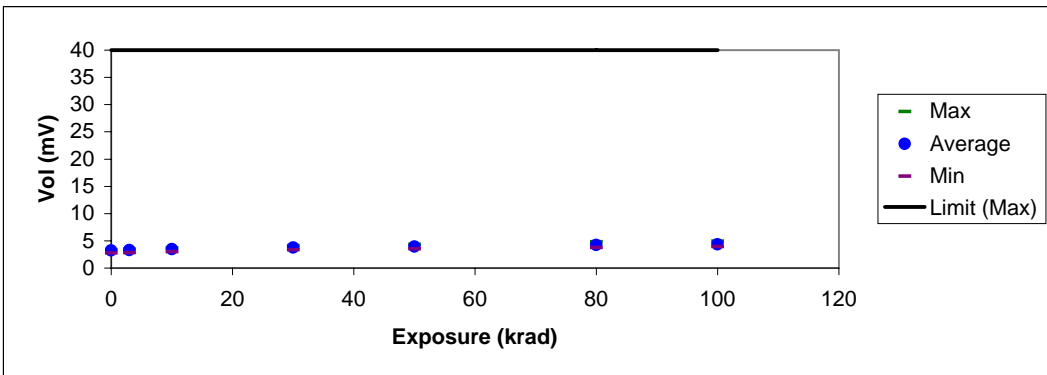
Low dose rate unbiased



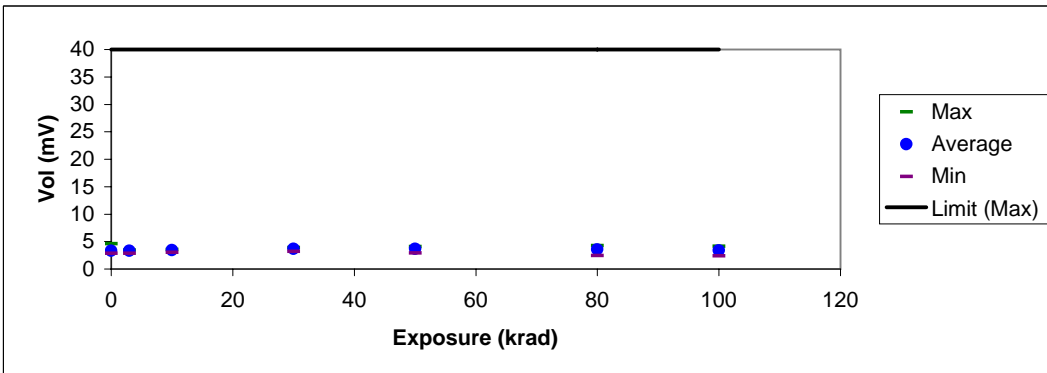
Low dose rate biased



High dose rate unbiased



High dose rate biased



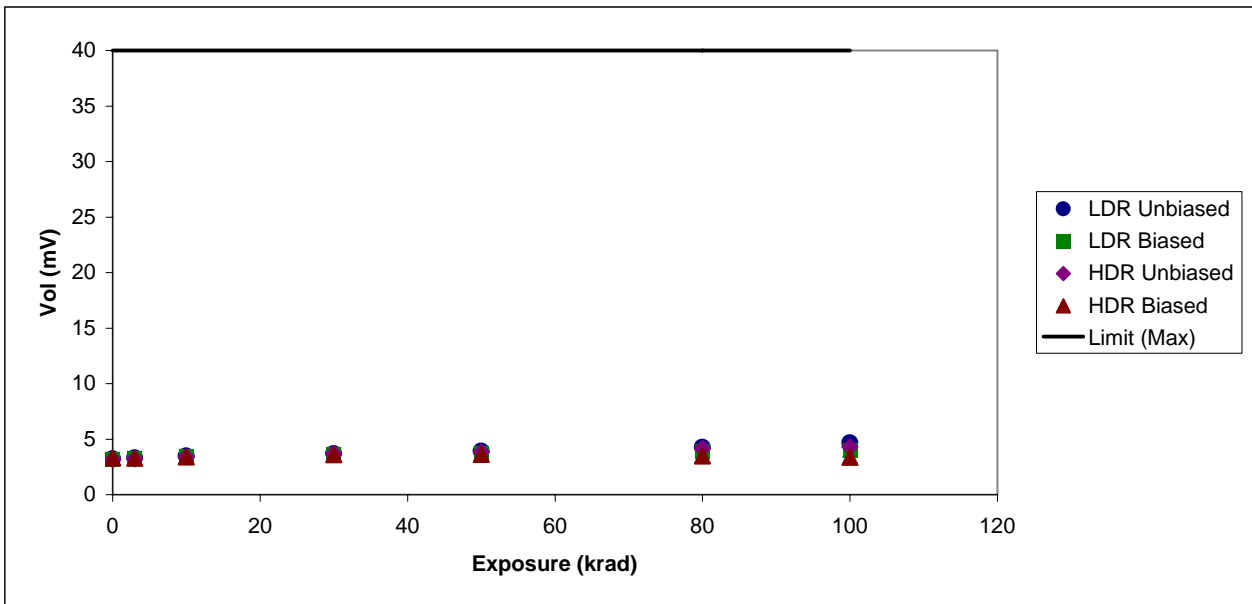
**TEST ID: 2016 Output Voltage Low; Vol**

Isink=1uA (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

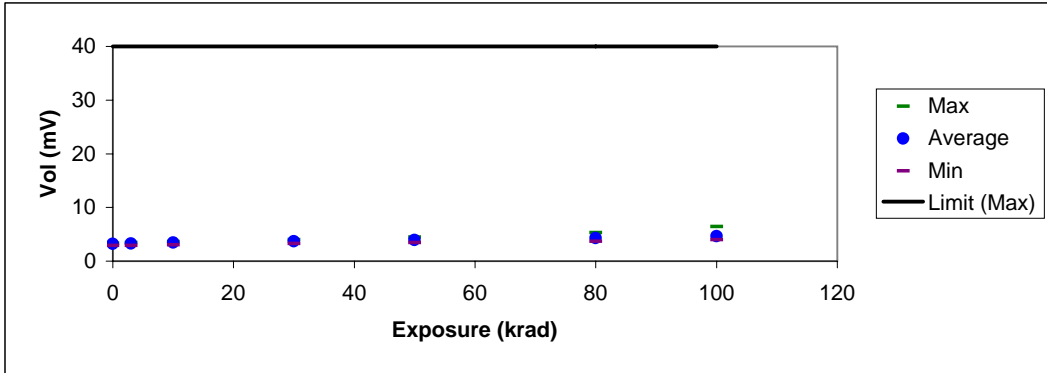
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	3.2107	3.37315	2.81512	0.124421	40	N/A	0	
LDR_BIASED	3	30	3.28989	3.45388	2.92024	0.115993	40	N/A	0.08456	2.21
LDR_BIASED	10	30	3.45209	3.59722	2.9513	0.134274	40	N/A	0.2396	1.44
LDR_BIASED	30	30	3.63574	3.88391	3.23698	0.14341	40	N/A	0.42808	1.22
LDR_BIASED	50	30	3.728	4.06497	3.08697	0.25576	40	N/A	0.53345	1.33
LDR_BIASED	80	30	3.87897	4.5131	2.70284	0.528724	40	N/A	0.78618	2.06
LDR_BIASED	100	30	4.00966	4.85424	2.73867	0.636099	40	N/A	0.80599	3.89
LDR_UNBIAS	0	30	3.22411	3.33971	2.91069	0.0851773	40	N/A	0	
LDR_UNBIAS	3	30	3.30714	3.47538	2.91547	0.104029	40	N/A	0.08456	1.24
LDR_UNBIAS	10	30	3.47654	3.63545	3.0182	0.109942	40	N/A	0.24915	1.11
LDR_UNBIAS	30	30	3.6982	4.01958	3.28954	0.130843	40	N/A	0.47706	0.94
LDR_UNBIAS	50	30	3.92209	4.48016	3.43766	0.238155	40	N/A	0.74079	1.27
LDR_UNBIAS	80	30	4.27751	5.33393	3.71429	0.389303	40	N/A	1.1507	1.24
LDR_UNBIAS	100	30	4.66465	6.44521	3.98852	0.571262	40	N/A	1.38936	1.31
HDR_BIASED	0	31	3.30946	4.70743	2.8937	0.359783	40	N/A	0	
HDR_BIASED	3	31	3.27332	3.41588	2.91998	0.102812	40	N/A	0.03822	
HDR_BIASED	10	31	3.40161	3.58134	2.98926	0.116378	40	N/A	0.16672	
HDR_BIASED	30	31	3.6042	3.78806	3.20138	0.130592	40	N/A	0.35017	
HDR_BIASED	50	31	3.62908	4.07423	2.83636	0.339919	40	N/A	0.40085	
HDR_BIASED	80	31	3.50105	4.1728	2.4379	0.516529	40	N/A	0.38174	
HDR_BIASED	100	31	3.37491	4.19191	2.34763	0.52615	40	N/A	0.20734	
HDR_UNBIAS	0	30	3.17071	3.37077	2.71956	0.155384	40	N/A	0	
HDR_UNBIAS	3	30	3.22981	3.47538	2.78884	0.165586	40	N/A	0.06809	
HDR_UNBIAS	10	30	3.38978	3.59722	2.84379	0.1891	40	N/A	0.22526	
HDR_UNBIAS	30	30	3.69915	4.02197	3.29193	0.178212	40	N/A	0.50692	
HDR_UNBIAS	50	30	3.82041	4.28904	3.45388	0.21802	40	N/A	0.58312	
HDR_UNBIAS	80	30	4.14113	4.666	3.72145	0.269011	40	N/A	0.92663	
HDR_UNBIAS	100	30	4.28729	4.87574	3.92213	0.284383	40	N/A	1.05753	

Plot of the average readings for each radiation/bias condition

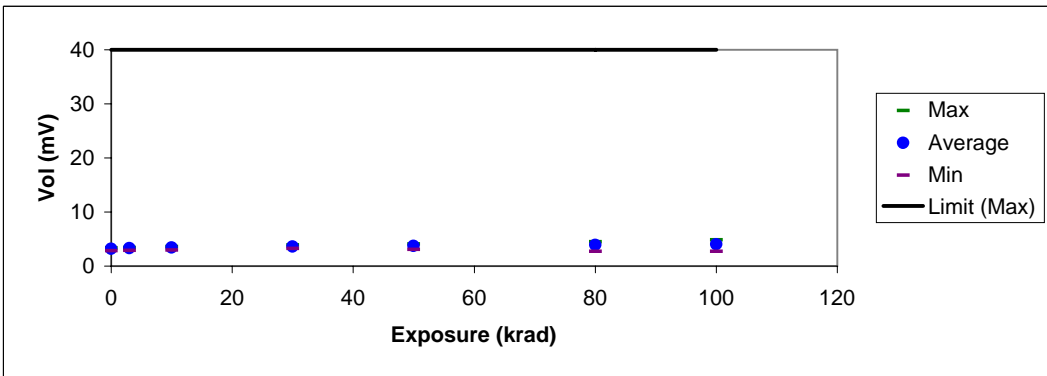


TEST ID: 2016 Output Voltage Low; Vol

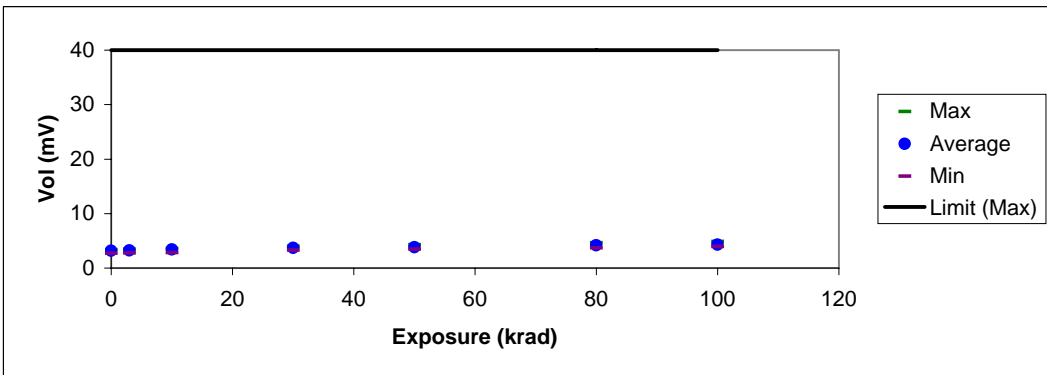
Low dose rate unbiased



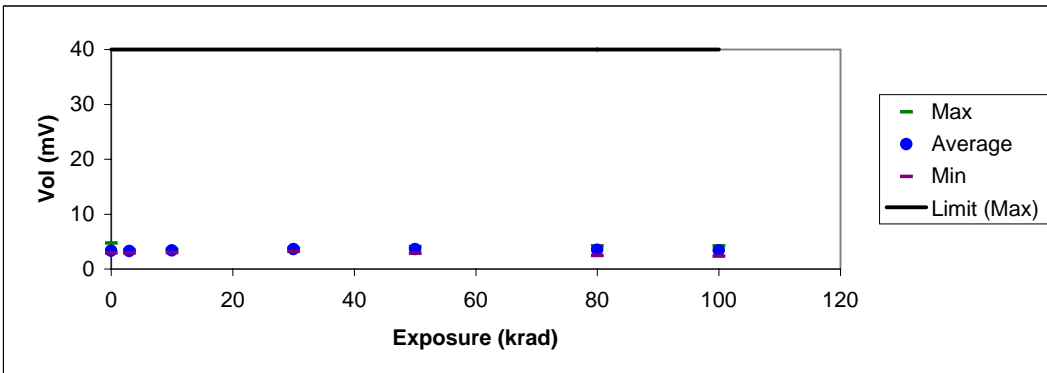
Low dose rate biased



High dose rate unbiased



High dose rate biased



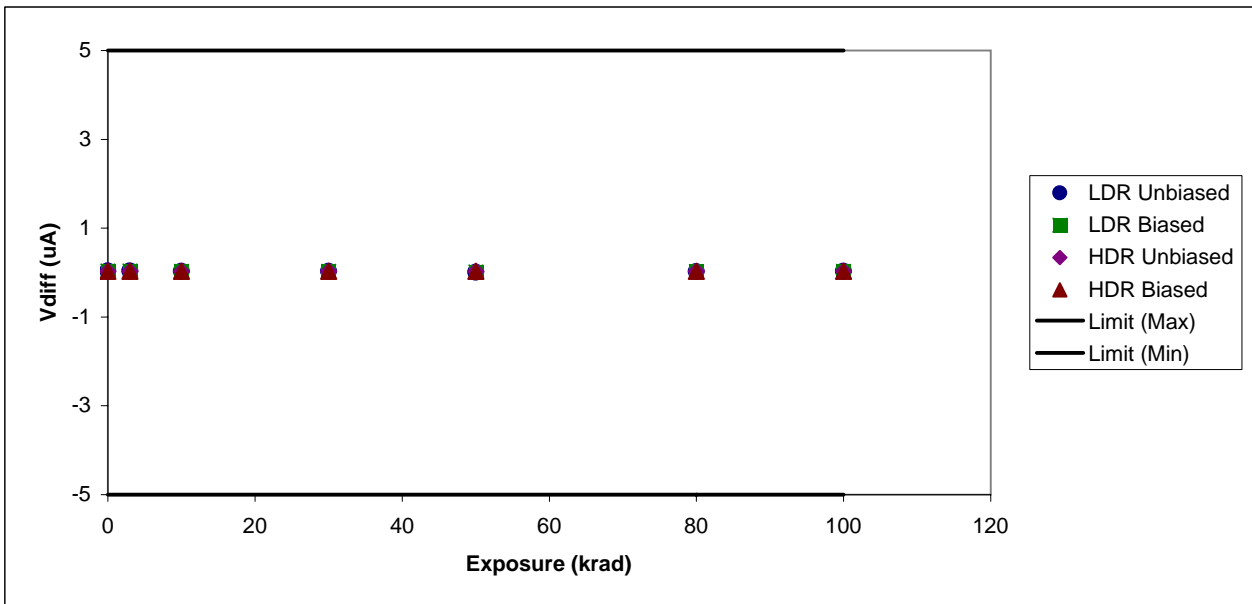
**TEST ID: 1017 Differential Input Voltage; Vdiff**

Vin=32V (uA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

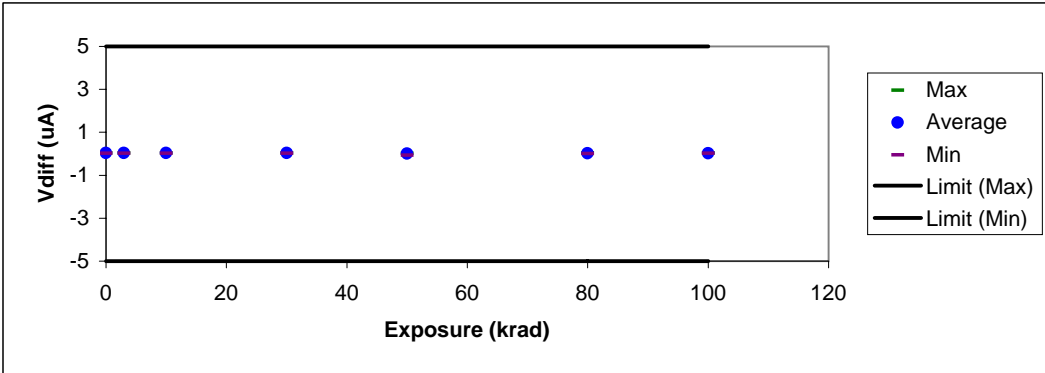
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	0.0324349	0.0398184	0.0254904	0.0036204	5	-5	0	
LDR_BIAS	3	30	0.0332721	0.0409171	0.0241659	0.00421877	5	-5	0.00142	5.26
LDR_BIAS	10	30	0.0306348	0.0375433	0.0229491	0.00405087	5	-5	-0.00072	1.04
LDR_BIAS	30	30	0.0302349	0.0399294	0.0228216	0.00460746	5	-5	-0.00296	1.63
LDR_BIAS	50	30	0.0118335	0.0180388	0.00720415	0.00265534	5	-5	-0.01948	7.67
LDR_BIAS	80	30	0.0188716	0.0341332	0.00796977	0.00926699	5	-5	-0.01488	8.80
LDR_BIAS	100	30	0.0274714	0.0366798	0.0169548	0.00522474	5	-5	-0.0048	1.81
LDR_UNBIAS	0	30	0.0332521	0.0395667	0.0271308	0.00304021	5	-5	0	
LDR_UNBIAS	3	30	0.0331168	0.0428256	0.0262059	0.00426583	5	-5	-0.0012	1.67
LDR_UNBIAS	10	30	0.0303674	0.038657	0.0206944	0.00489439	5	-5	-0.00222	1.25
LDR_UNBIAS	30	30	0.0309342	0.038805	0.0239551	0.00466742	5	-5	-0.00392	4.36
LDR_UNBIAS	50	30	0.00817242	0.0150278	-0.0696048	0.0148134	5	-5	-0.02298	16.18
LDR_UNBIAS	80	30	0.0197327	0.0352503	0.00539145	0.0101631	5	-5	-0.01539	6.16
LDR_UNBIAS	100	30	0.0285265	0.0372235	0.0210089	0.00338511	5	-5	-0.00585	1.59
HDR_BIAS	0	31	0.0279764	0.038218	0.0165511	0.00497759	5	-5	0	
HDR_BIAS	3	31	0.0280076	0.0322321	0.0244098	0.0021761	5	-5	0.00027	
HDR_BIAS	10	31	0.0271618	0.0317062	0.0230687	0.00211913	5	-5	-0.00069	
HDR_BIAS	30	31	0.026705	0.0308838	0.0232279	0.00199836	5	-5	-0.00182	
HDR_BIAS	50	31	0.0254182	0.0307265	0.0207123	0.00218703	5	-5	-0.00254	
HDR_BIAS	80	31	0.0257313	0.0296781	0.0206496	0.00209236	5	-5	-0.00169	
HDR_BIAS	100	31	0.0257709	0.0313832	0.0215652	0.00223264	5	-5	-0.00265	
HDR_UNBIAS	0	30	0.0308419	0.0392912	0.0240754	0.00336121	5	-5	0	
HDR_UNBIAS	3	30	0.0299474	0.0372347	0.0239294	0.00291203	5	-5	-0.00072	
HDR_UNBIAS	10	30	0.029251	0.0354405	0.024129	0.00248891	5	-5	-0.00177	
HDR_UNBIAS	30	30	0.029568	0.0362101	0.0240959	0.00316619	5	-5	-0.0009	
HDR_UNBIAS	50	30	0.0287291	0.0357939	0.0214508	0.00265093	5	-5	-0.00142	
HDR_UNBIAS	80	30	0.0285088	0.0345916	0.023393	0.00215698	5	-5	-0.0025	
HDR_UNBIAS	100	30	0.0277438	0.033569	0.0236481	0.00284886	5	-5	-0.00369	

Plot of the average readings for each radiation/bias condition

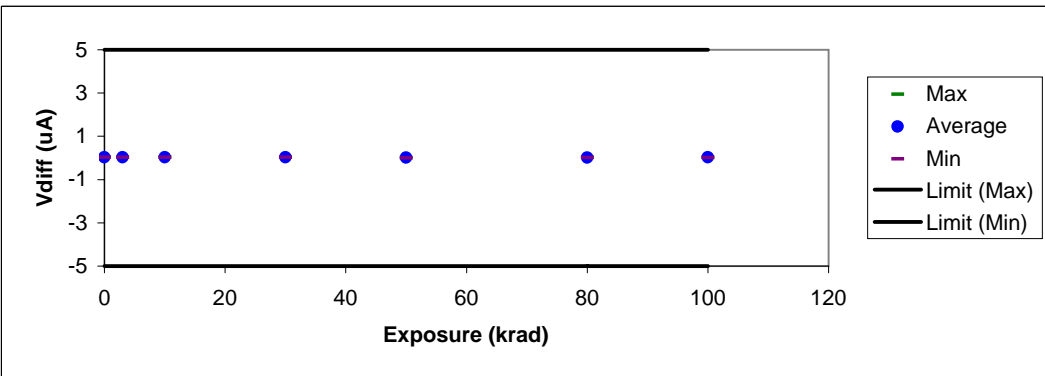


TEST ID: 1017 Differential Input Voltage; Vdiff

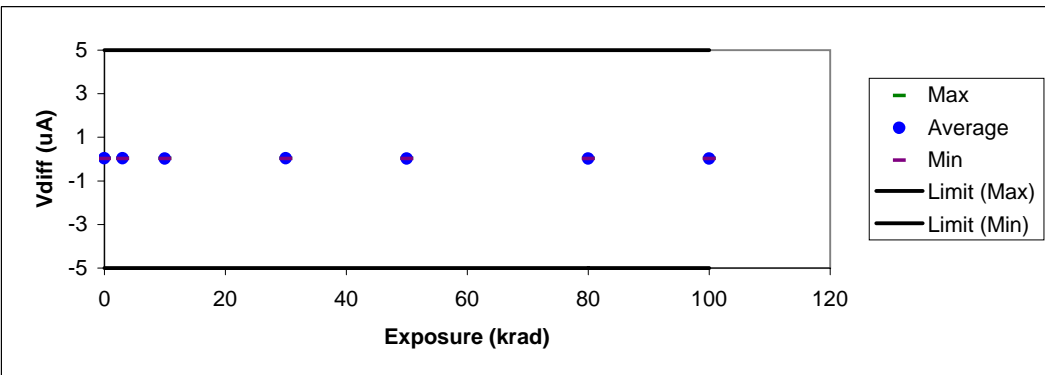
Low dose rate unbiased



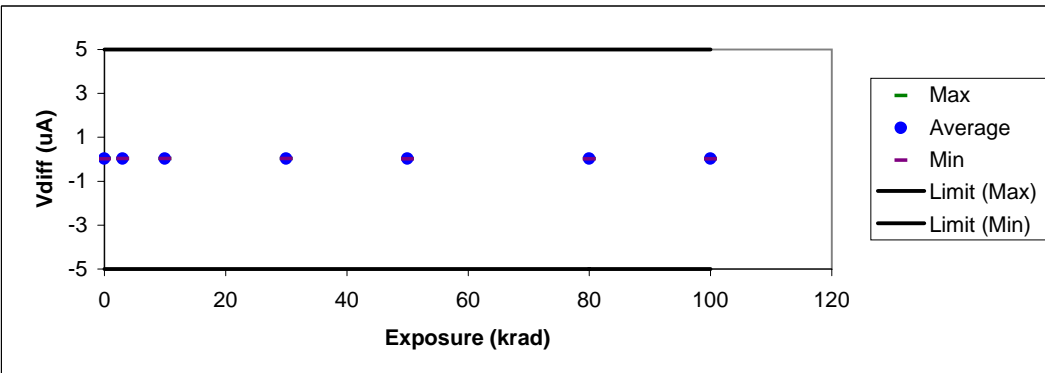
Low dose rate biased



High dose rate unbiased



High dose rate biased



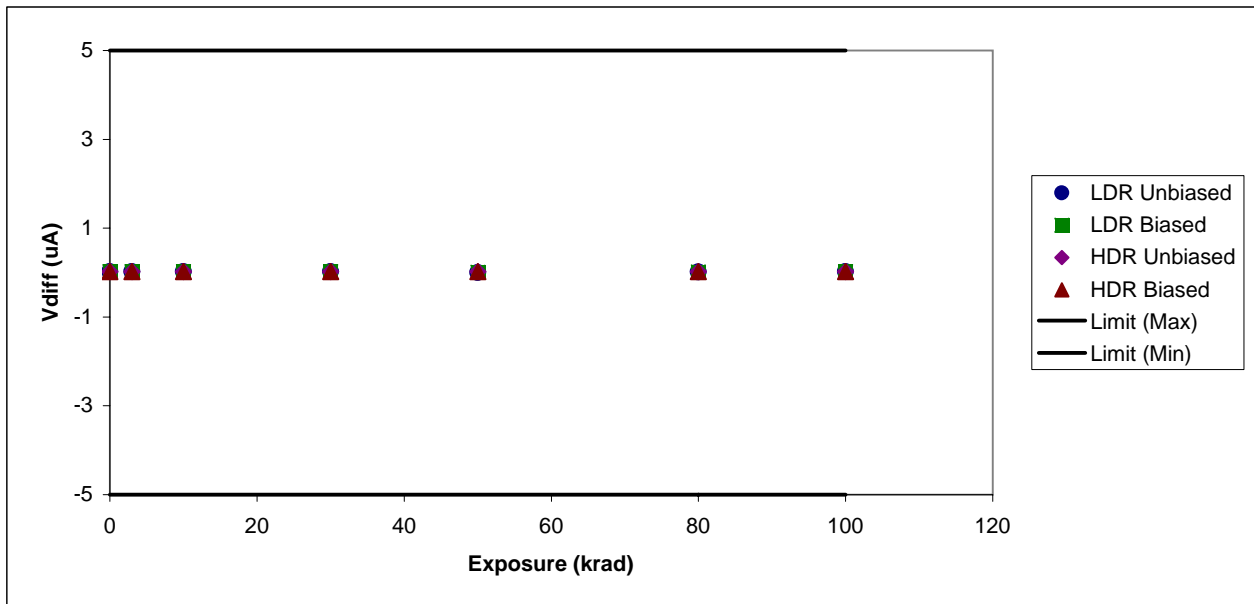
**TEST ID: 2017 Differential Input Voltage; Vdiff**

V<sub>in</sub>=32V (uA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

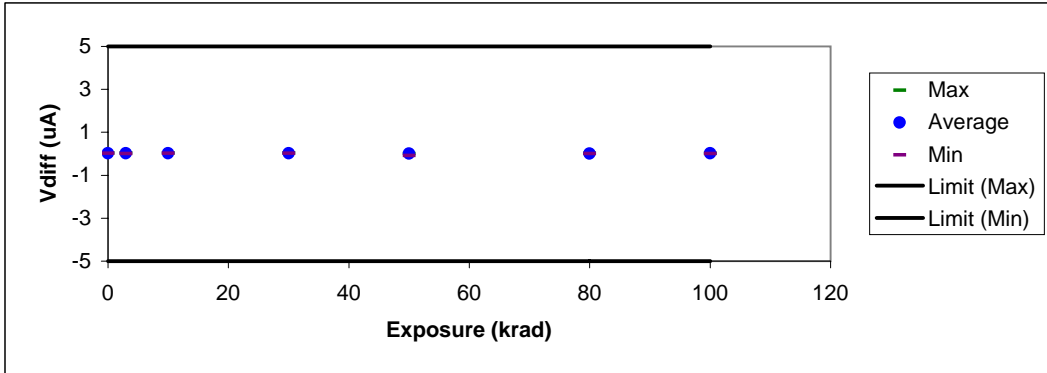
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	0.0244222	0.0337446	0.0163	0.00456042	5	-5	0	
LDR_BIAS	3	30	0.0230532	0.0317492	0.0156157	0.00413194	5	-5	-0.00185	9.74
LDR_BIAS	10	30	0.0226442	0.0309668	0.0130874	0.00424608	5	-5	-0.00207	-9.00
LDR_BIAS	30	30	0.0224664	0.0323686	0.0135757	0.00574076	5	-5	-0.00195	2.87
LDR_BIAS	50	30	0.00391996	0.00986177	-0.00011539	0.00275449	5	-5	-0.01958	17.18
LDR_BIAS	80	30	0.0130322	0.0279168	-0.00148736	0.0104982	5	-5	-0.01495	8.08
LDR_BIAS	100	30	0.0202709	0.027216	0.0121295	0.00408646	5	-5	-0.00506	3.35
LDR_UNBIAS	0	30	0.0241254	0.03137	0.0187542	0.00343342	5	-5	0	
LDR_UNBIAS	3	30	0.0238037	0.0325464	0.0139014	0.00482014	5	-5	-0.00031	-1.19
LDR_UNBIAS	10	30	0.0251288	0.0342349	0.0153606	0.0046449	5	-5	0.00092	2.56
LDR_UNBIAS	30	30	0.0221604	0.0313144	0.0152939	0.00462328	5	-5	-0.00282	1.96
LDR_UNBIAS	50	30	0.00141037	0.00906248	-0.083195	0.0160967	5	-5	-0.0197	22.13
LDR_UNBIAS	80	30	0.0128043	0.0277411	0.00174028	0.00967039	5	-5	-0.01404	4.88
LDR_UNBIAS	100	30	0.0204225	0.0290082	0.0126548	0.00456451	5	-5	-0.00305	1.11
HDR_BIAS	0	31	0.0205602	0.0292132	0.0116554	0.0040881	5	-5	0	
HDR_BIAS	3	31	0.0194461	0.022453	0.015802	0.00186869	5	-5	-0.00019	
HDR_BIAS	10	31	0.0192974	0.0225851	0.0146868	0.00188751	5	-5	0.00023	
HDR_BIAS	30	31	0.0185925	0.0231824	0.0137342	0.00247623	5	-5	-0.00068	
HDR_BIAS	50	31	0.019018	0.0237207	0.0138341	0.00227359	5	-5	-0.00114	
HDR_BIAS	80	31	0.0184364	0.0214252	0.0139358	0.0019175	5	-5	-0.00185	
HDR_BIAS	100	31	0.0188295	0.022562	0.0132884	0.002273	5	-5	-0.00151	
HDR_UNBIAS	0	30	0.0232658	0.0285385	0.0168344	0.00249669	5	-5	0	
HDR_UNBIAS	3	30	0.0236262	0.0293225	0.0169123	0.0029518	5	-5	0.00026	
HDR_UNBIAS	10	30	0.022421	0.0302086	0.0138921	0.00382677	5	-5	0.00036	
HDR_UNBIAS	30	30	0.0213592	0.0277041	0.0141973	0.00307086	5	-5	-0.00144	
HDR_UNBIAS	50	30	0.022293	0.029067	0.0163945	0.00286295	5	-5	-0.00089	
HDR_UNBIAS	80	30	0.0203366	0.0265889	0.013287	0.00301594	5	-5	-0.00288	
HDR_UNBIAS	100	30	0.0196565	0.0255735	0.0128655	0.00321553	5	-5	-0.00274	

Plot of the average readings for each radiation/bias condition

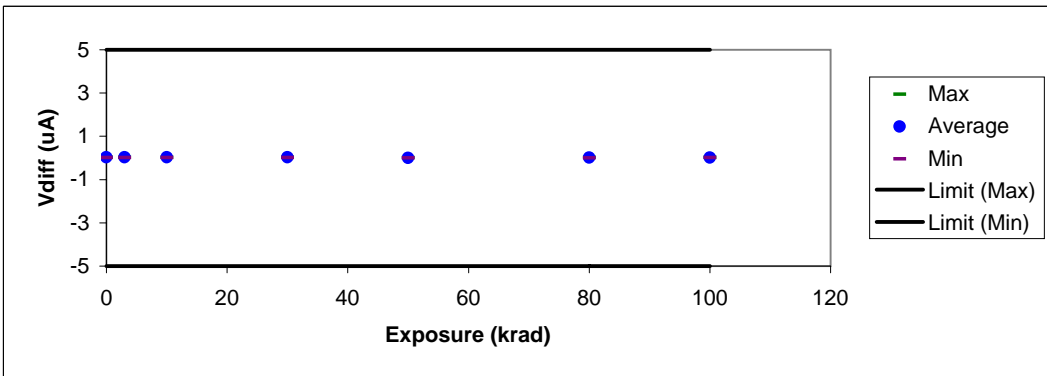


TEST ID: 2017 Differential Input Voltage; Vdiff

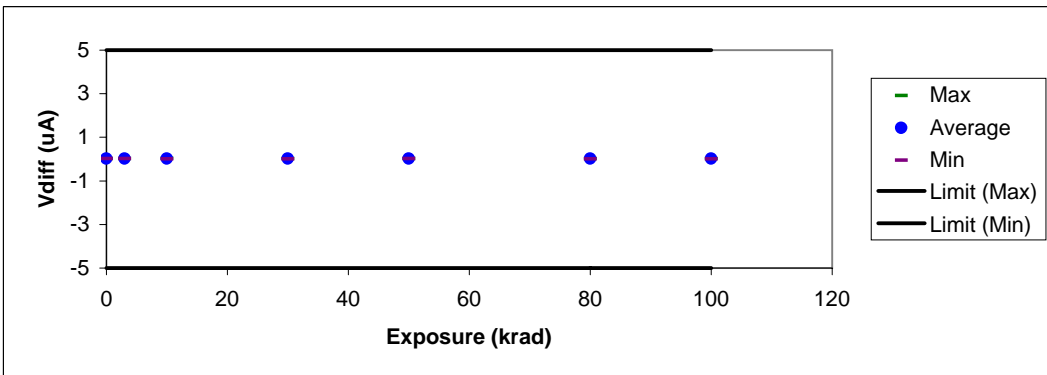
Low dose rate unbiased



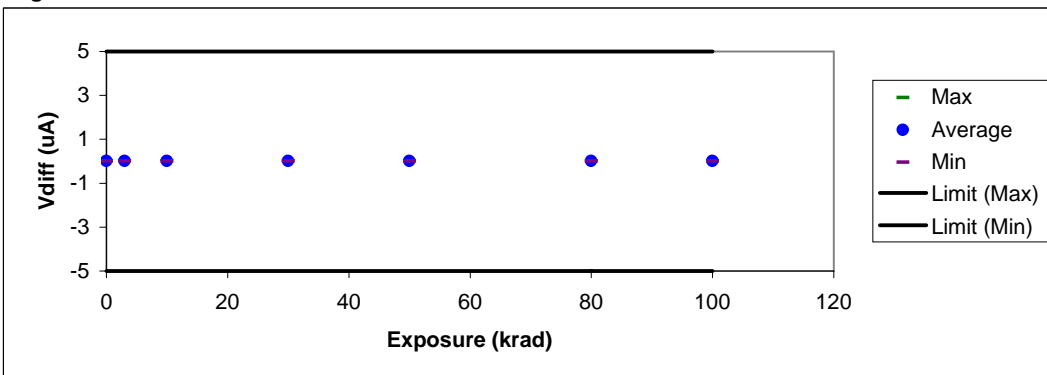
Low dose rate biased



High dose rate unbiased



High dose rate biased



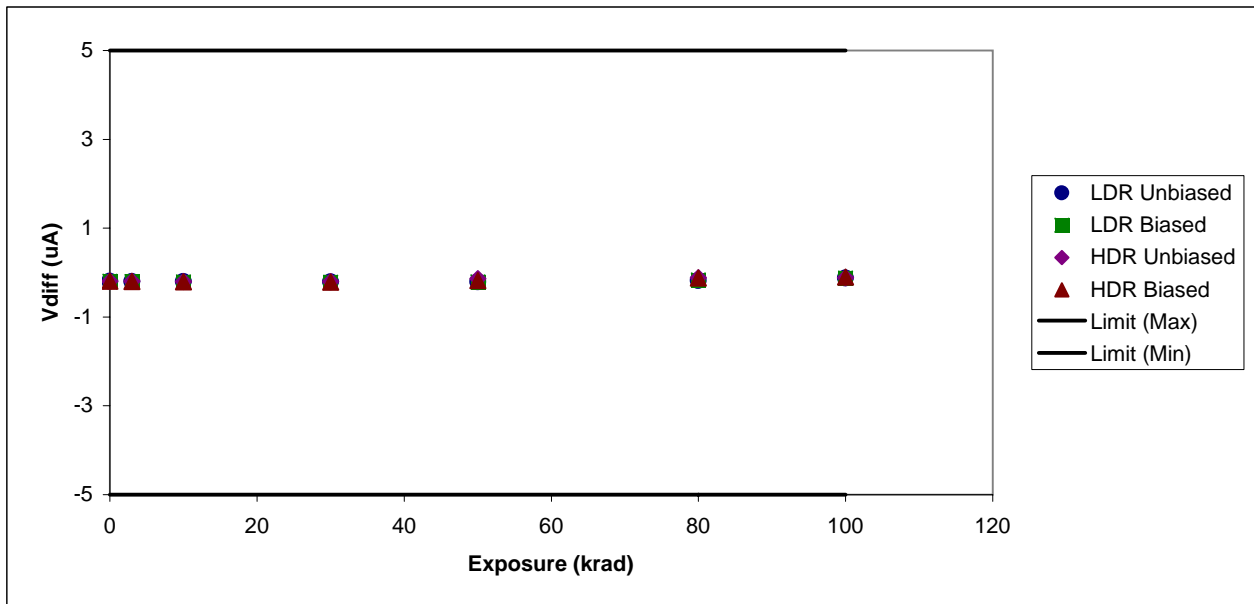
**TEST ID: 1018 Differential Input Voltage; Vdiff**

Vin=-32V (uA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

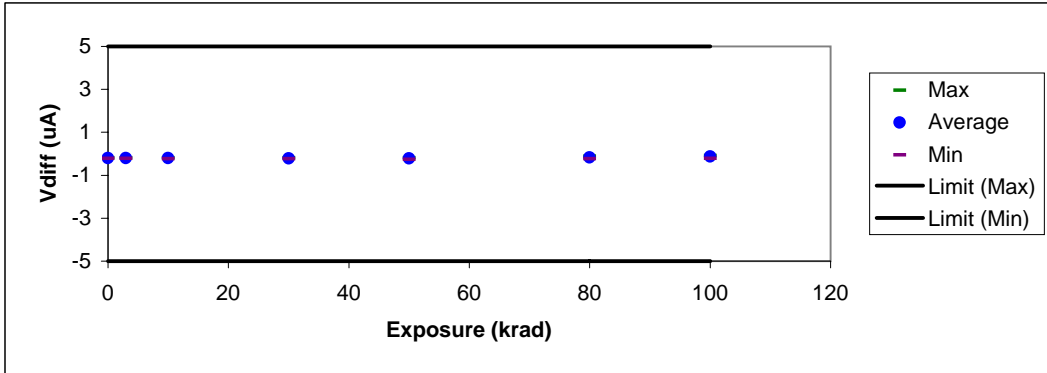
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-0.194838	-0.17836	-0.211681	0.00636141	5	-5	0	
LDR_BIAS	3	30	-0.202053	-0.185758	-0.217732	0.00929184	5	-5	-0.00809	2.54
LDR_BIAS	10	30	-0.206374	-0.192238	-0.222969	0.00840218	5	-5	-0.01104	1.29
LDR_BIAS	30	30	-0.213452	-0.199251	-0.234422	0.00814064	5	-5	-0.01866	1.37
LDR_BIAS	50	30	-0.209915	-0.187814	-0.262416	0.0177801	5	-5	-0.01341	-3.29
LDR_BIAS	80	30	-0.168658	-0.0929718	-0.236567	0.042818	5	-5	0.00827	0.11
LDR_BIAS	100	30	-0.122752	-0.0521197	-0.214122	0.0286782	5	-5	0.07001	0.75
LDR_UNBIAS	0	30	-0.19553	-0.179913	-0.211459	0.00721992	5	-5	0	
LDR_UNBIAS	3	30	-0.201034	-0.188998	-0.221268	0.00789721	5	-5	-0.00337	-15.32
LDR_UNBIAS	10	30	-0.203384	-0.184279	-0.233032	0.0109548	5	-5	-0.00732	1.71
LDR_UNBIAS	30	30	-0.208737	-0.192534	-0.22948	0.00982898	5	-5	-0.01068	0.74
LDR_UNBIAS	50	30	-0.210433	-0.190478	-0.264931	0.0160825	5	-5	-0.01153	-0.18
LDR_UNBIAS	80	30	-0.176698	-0.114841	-0.236789	0.0374147	5	-5	0.00192	0.02
LDR_UNBIAS	100	30	-0.120699	-0.0864766	-0.222082	0.0339045	5	-5	0.086	1.09
HDR_BIAS	0	31	-0.197757	-0.181986	-0.221655	0.00901008	5	-5	0	
HDR_BIAS	3	31	-0.201026	-0.189385	-0.224395	0.00610632	5	-5	-0.00318	
HDR_BIAS	10	31	-0.207567	-0.194977	-0.220413	0.0060068	5	-5	-0.00857	
HDR_BIAS	30	31	-0.213816	-0.19616	-0.236141	0.00790435	5	-5	-0.01367	
HDR_BIAS	50	31	-0.182079	-0.12896	-0.225933	0.0373791	5	-5	0.00407	
HDR_BIAS	80	31	-0.123227	-0.0884007	-0.165817	0.0189353	5	-5	0.07564	
HDR_BIAS	100	31	-0.0993165	-0.0354458	-0.135304	0.0262784	5	-5	0.09279	
HDR_UNBIAS	0	30	-0.196464	-0.177398	-0.223561	0.0098833	5	-5	0	
HDR_UNBIAS	3	30	-0.197973	-0.183243	-0.222304	0.00879218	5	-5	0.00022	
HDR_UNBIAS	10	30	-0.202863	-0.192164	-0.222378	0.00671921	5	-5	-0.00429	
HDR_UNBIAS	30	30	-0.203813	-0.145482	-0.224597	0.0202756	5	-5	-0.01441	
HDR_UNBIAS	50	30	-0.136816	-0.112473	-0.212643	0.0234251	5	-5	0.06378	
HDR_UNBIAS	80	30	-0.112316	-0.0922319	-0.143205	0.011131	5	-5	0.08364	
HDR_UNBIAS	100	30	-0.1156	-0.0795958	-0.147628	0.0191761	5	-5	0.07863	

Plot of the average readings for each radiation/bias condition

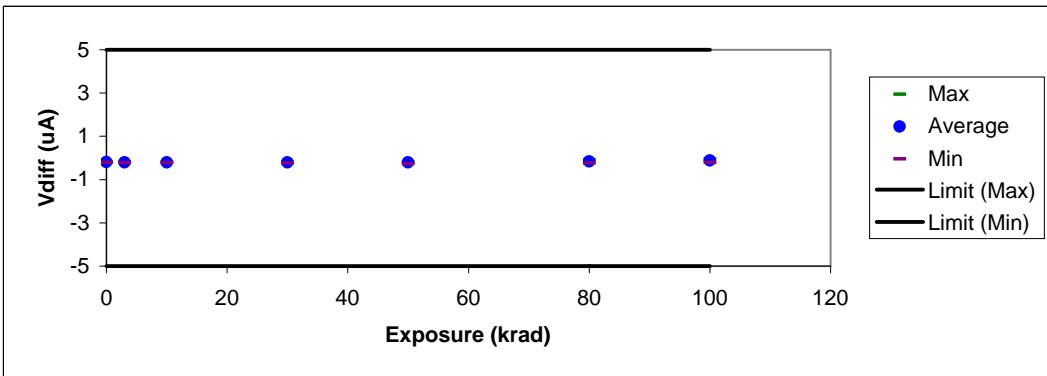


TEST ID: 1018 Differential Input Voltage; Vdiff

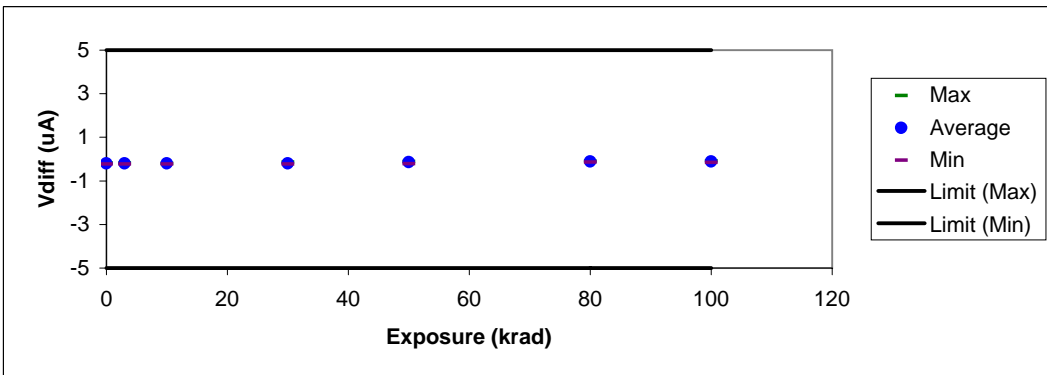
Low dose rate unbiased



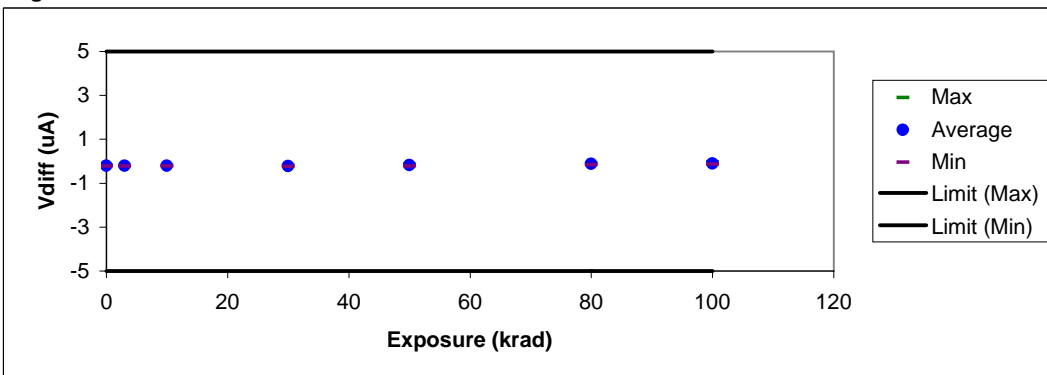
Low dose rate biased



High dose rate unbiased



High dose rate biased



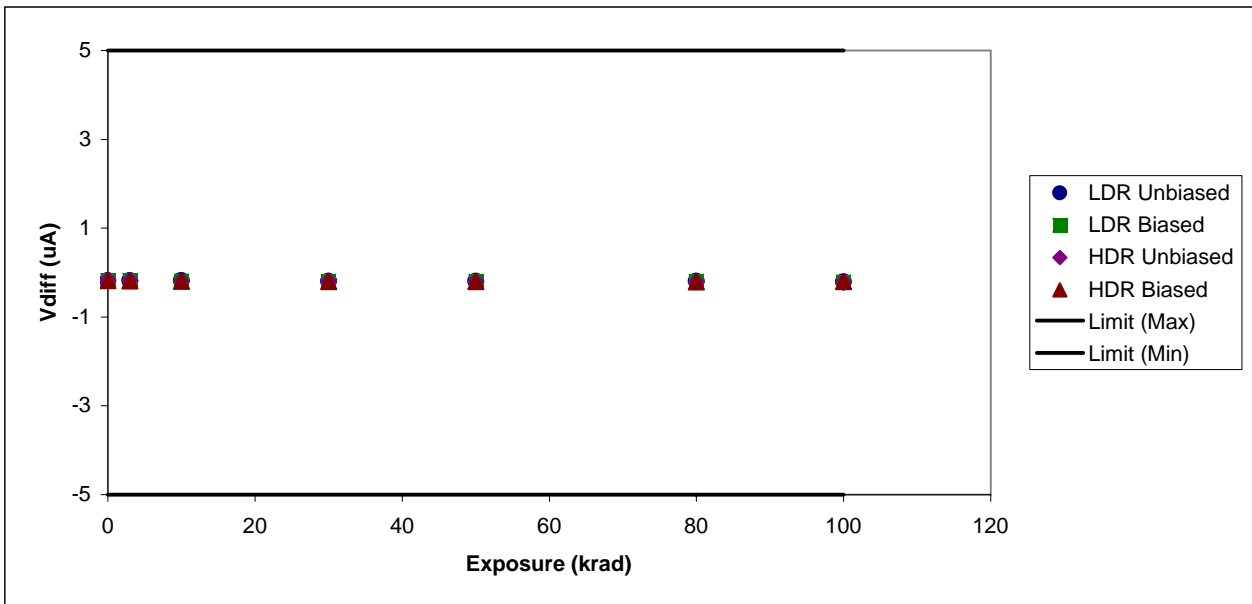
**TEST ID: 2018 Differential Input Voltage; Vdiff**

Vin=-32V (uA)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

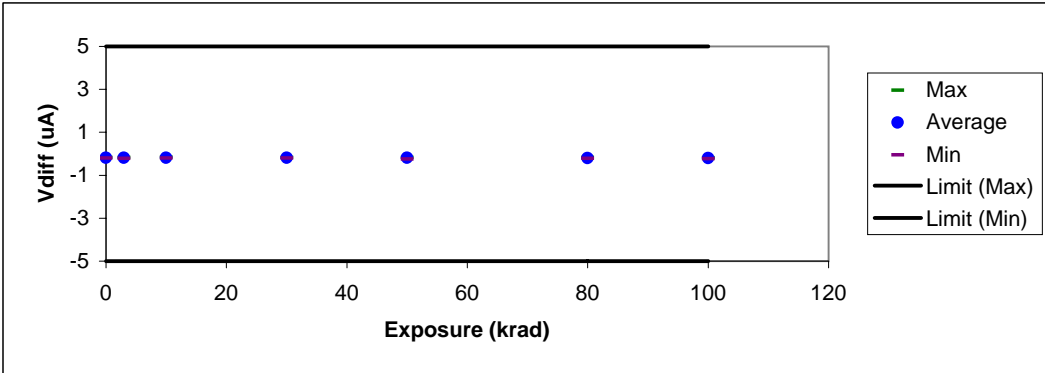
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-0.179456	-0.16093	-0.191498	0.00752761	5	-5	0	
LDR_BIAS	3	30	-0.180771	-0.165724	-0.194014	0.0070657	5	-5	-0.001	0.45
LDR_BIAS	10	30	-0.188377	-0.167425	-0.209979	0.00932669	5	-5	-0.00653	0.70
LDR_BIAS	30	30	-0.192489	-0.17836	-0.208721	0.0085403	5	-5	-0.01195	0.66
LDR_BIAS	50	30	-0.194666	-0.17327	-0.233624	0.0149342	5	-5	-0.01299	0.64
LDR_BIAS	80	30	-0.193835	-0.179247	-0.217066	0.0105311	5	-5	-0.01376	0.49
LDR_BIAS	100	30	-0.211618	-0.194457	-0.238639	0.0107604	5	-5	-0.03079	0.88
LDR_UNBIAS	0	30	-0.178956	-0.168535	-0.195419	0.00607985	5	-5	0	
LDR_UNBIAS	3	30	-0.183198	-0.165058	-0.209609	0.00972528	5	-5	-0.00337	1.57
LDR_UNBIAS	10	30	-0.183654	-0.163298	-0.201027	0.00863012	5	-5	-0.00624	0.61
LDR_UNBIAS	30	30	-0.191647	-0.173862	-0.206724	0.00884649	5	-5	-0.01528	0.74
LDR_UNBIAS	50	30	-0.192871	-0.170459	-0.238787	0.0183209	5	-5	-0.00925	0.35
LDR_UNBIAS	80	30	-0.194295	-0.174956	-0.21316	0.0103433	5	-5	-0.01436	0.43
LDR_UNBIAS	100	30	-0.207647	-0.19135	-0.233032	0.0107419	5	-5	-0.02478	0.64
HDR_BIAS	0	31	-0.179449	-0.158135	-0.195642	0.00858797	5	-5	0	
HDR_BIAS	3	31	-0.184644	-0.173789	-0.204505	0.00787652	5	-5	-0.00222	
HDR_BIAS	10	31	-0.191789	-0.180876	-0.213902	0.0074119	5	-5	-0.00938	
HDR_BIAS	30	31	-0.198337	-0.188571	-0.219379	0.0063591	5	-5	-0.01802	
HDR_BIAS	50	31	-0.20316	-0.191444	-0.220489	0.00670443	5	-5	-0.02017	
HDR_BIAS	80	31	-0.209461	-0.201414	-0.218122	0.00441189	5	-5	-0.02829	
HDR_BIAS	100	31	-0.204776	-0.0845534	-0.246763	0.0412686	5	-5	-0.03493	
HDR_UNBIAS	0	30	-0.174493	-0.157971	-0.186646	0.00715773	5	-5	0	
HDR_UNBIAS	3	30	-0.178308	-0.159968	-0.190536	0.00692994	5	-5	-0.00214	
HDR_UNBIAS	10	30	-0.18501	-0.173994	-0.201027	0.0067262	5	-5	-0.01019	
HDR_UNBIAS	30	30	-0.196226	-0.185092	-0.2164	0.00630334	5	-5	-0.02056	
HDR_UNBIAS	50	30	-0.20119	-0.183613	-0.220248	0.00881406	5	-5	-0.02621	
HDR_UNBIAS	80	30	-0.210286	-0.194531	-0.227113	0.00813873	5	-5	-0.03313	
HDR_UNBIAS	100	30	-0.214067	-0.196825	-0.242471	0.0094594	5	-5	-0.03885	

Plot of the average readings for each radiation/bias condition

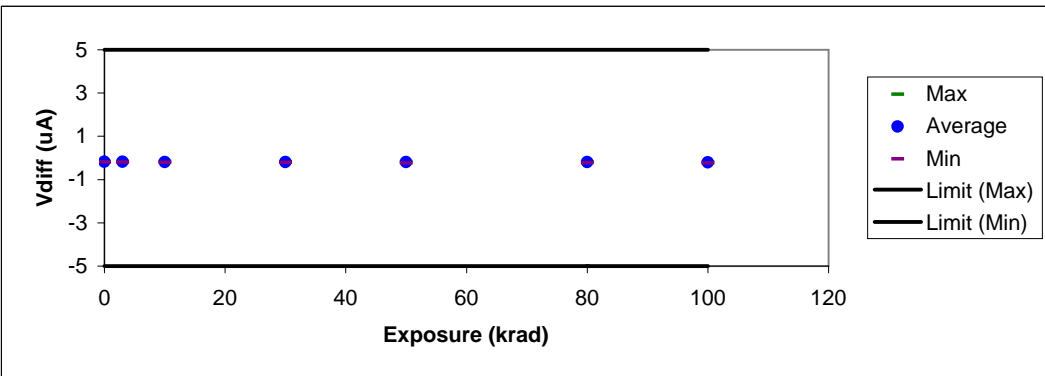


TEST ID: 2018 Differential Input Voltage; Vdiff

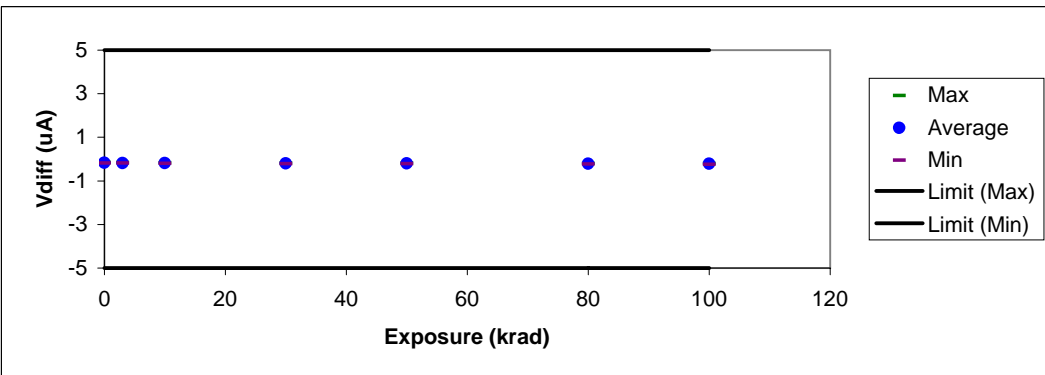
Low dose rate unbiased



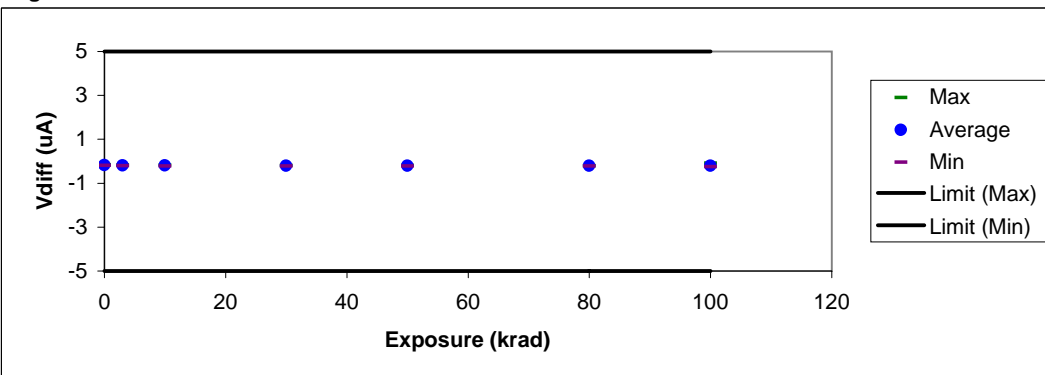
Low dose rate biased



High dose rate unbiased



High dose rate biased



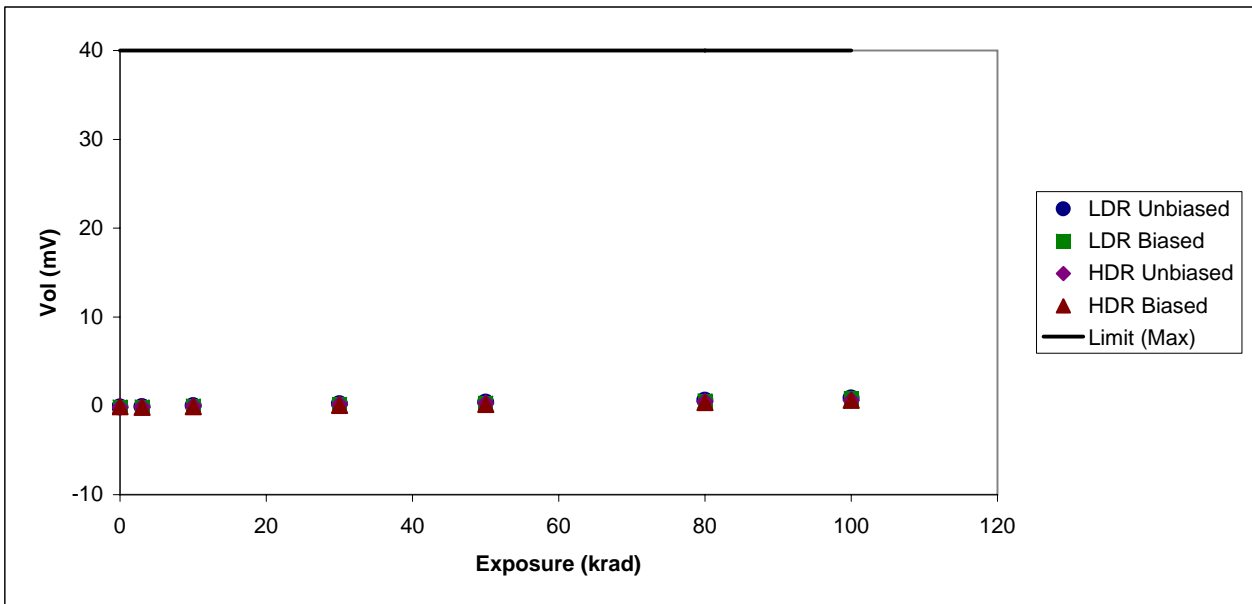
TEST ID: 1019 Output Voltage Low; Vol

RL=10K (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

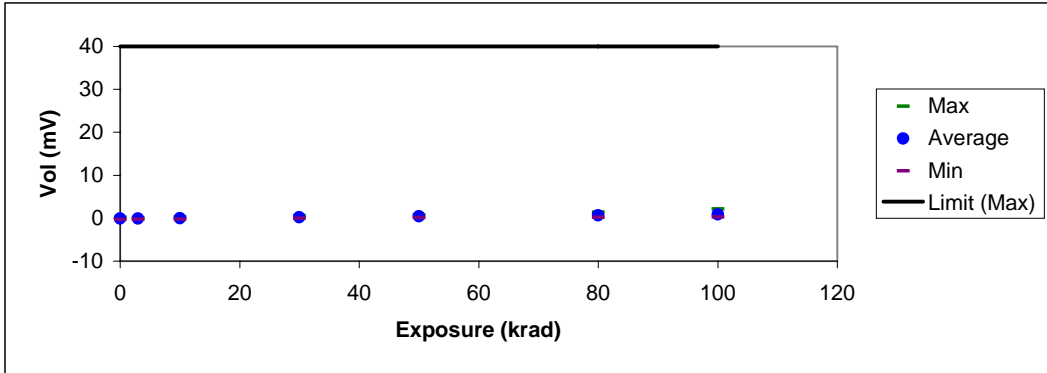
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	-0.134488	0.0410268	-0.264268	0.0904986	40	N/A	0	
LDR_BIASED	3	30	-0.116348	0.0696957	-0.230821	0.0868913	40	N/A	0.01195	
LDR_BIASED	10	30	-0.0226143	0.124644	-0.218876	0.0858405	40	N/A	0.12014	2.29
LDR_BIASED	30	30	0.142005	0.382664	-0.114263	0.145132	40	N/A	0.28977	1.31
LDR_BIASED	50	30	0.297143	0.685064	0.0386377	0.16972	40	N/A	0.40444	1.27
LDR_BIASED	80	30	0.539991	1.03097	0.134201	0.261598	40	N/A	0.68013	1.37
LDR_BIASED	100	30	0.807766	1.42227	0.272767	0.32025	40	N/A	0.84182	1.04
LDR_UNBIAS	0	30	-0.121286	0.229764	-0.295326	0.114121	40	N/A	0	
LDR_UNBIAS	3	30	-0.0802272	0.076863	-0.218876	0.0888098	40	N/A	0.04778	1.43
LDR_UNBIAS	10	30	0.0138879	0.287101	-0.228432	0.10067	40	N/A	0.14787	1.03
LDR_UNBIAS	30	30	0.228103	0.55656	-0.0282563	0.147113	40	N/A	0.36408	1.19
LDR_UNBIAS	50	30	0.394989	0.766292	0.107921	0.209619	40	N/A	0.52031	1.17
LDR_UNBIAS	80	30	0.627313	1.41033	0.229764	0.286293	40	N/A	0.74318	1.16
LDR_UNBIAS	100	30	0.878199	2.10897	0.270378	0.459148	40	N/A	0.89344	1.19
HDR_BIASED	0	31	-0.101762	0.814976	-0.384166	0.270254	40	N/A	0	
HDR_BIASED	3	31	-0.157565	-0.0158335	-0.308224	0.0703685	40	N/A	0	
HDR_BIASED	10	31	-0.107433	0.0964503	-0.329218	0.105617	40	N/A	0.05256	
HDR_BIASED	30	31	0.0619868	0.46863	-0.134778	0.14294	40	N/A	0.22167	
HDR_BIASED	50	31	0.153381	0.537912	-0.077948	0.177981	40	N/A	0.31723	
HDR_BIASED	80	31	0.391129	1.06965	0.14662	0.229258	40	N/A	0.4959	
HDR_BIASED	100	31	0.641161	1.1461	0.204908	0.287136	40	N/A	0.80836	
HDR_UNBIAS	0	30	-0.170365	-0.0187	-0.323488	0.0684117	40	N/A	0	
HDR_UNBIAS	3	30	-0.128738	0.0219142	-0.247545	0.0756123	40	N/A	0.03345	
HDR_UNBIAS	10	30	-0.0349361	0.184371	-0.283381	0.118358	40	N/A	0.14403	
HDR_UNBIAS	30	30	0.160225	0.496833	-0.0664815	0.151029	40	N/A	0.30529	
HDR_UNBIAS	50	30	0.287092	0.658784	-0.0664815	0.194915	40	N/A	0.44506	
HDR_UNBIAS	80	30	0.499814	0.954522	0.193928	0.217334	40	N/A	0.64071	
HDR_UNBIAS	100	30	0.6272	1.12654	0.308603	0.236719	40	N/A	0.74916	

Plot of the average readings for each radiation/bias condition

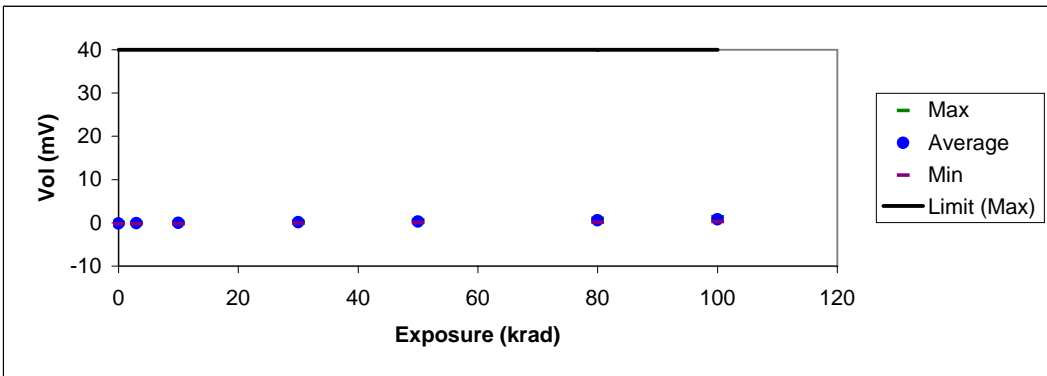


TEST ID: 1019 Output Voltage Low; Vol

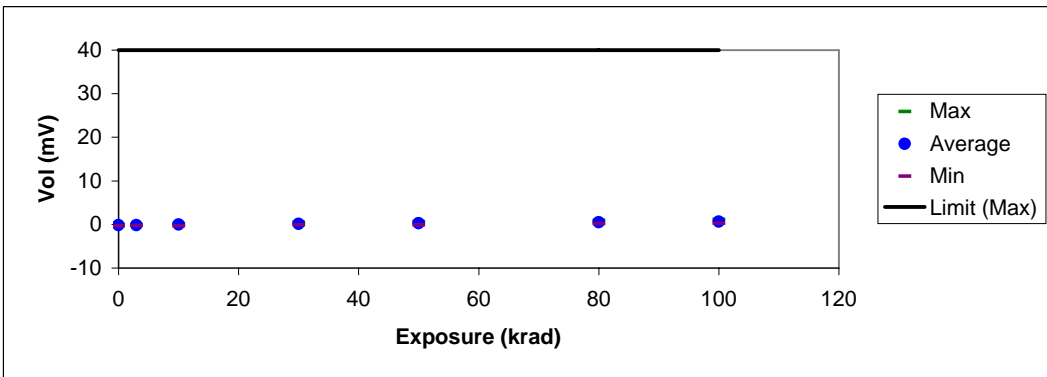
Low dose rate unbiased



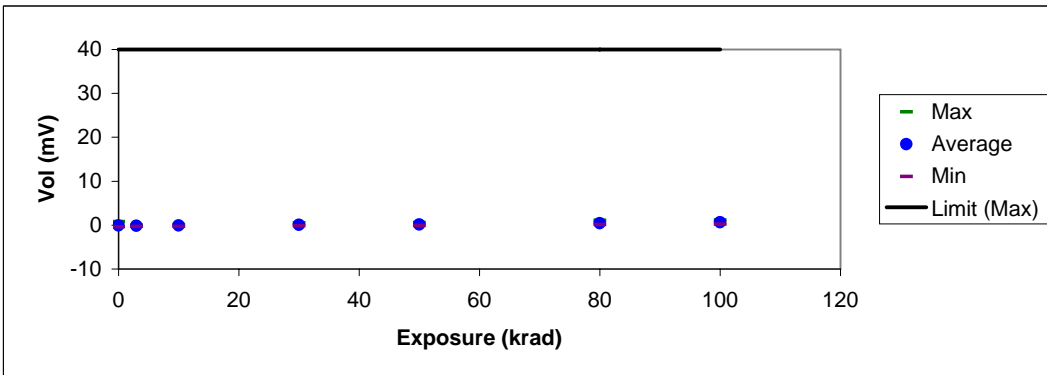
Low dose rate biased



High dose rate unbiased



High dose rate biased



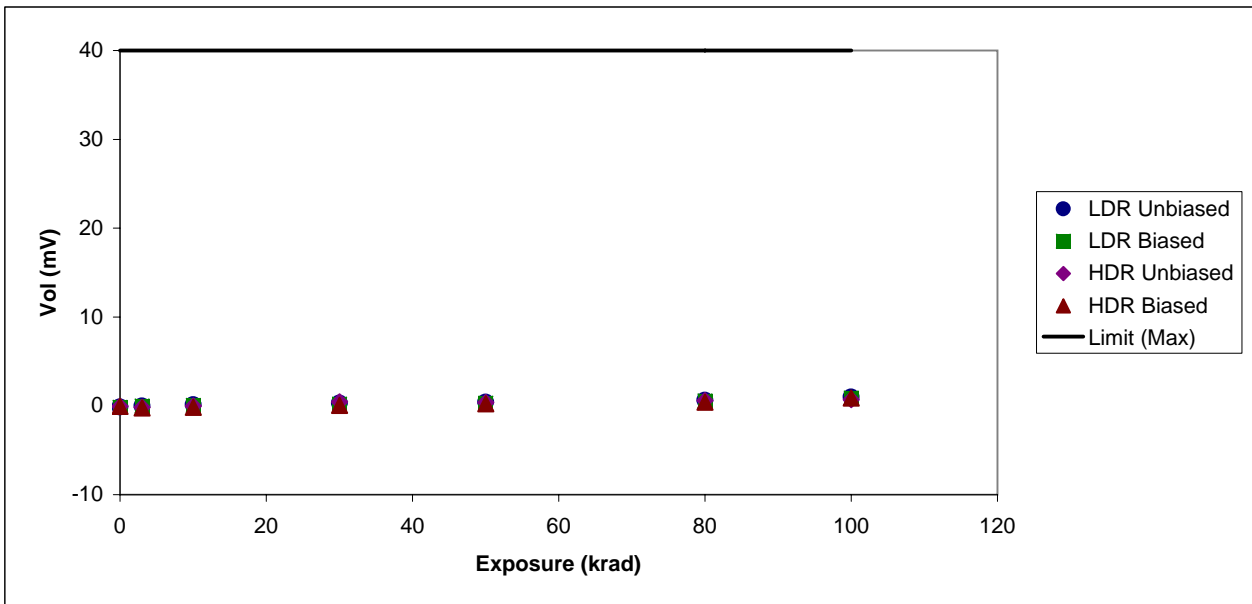
**TEST ID: 2019 Output Voltage Low; Vol**

RL=10K (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

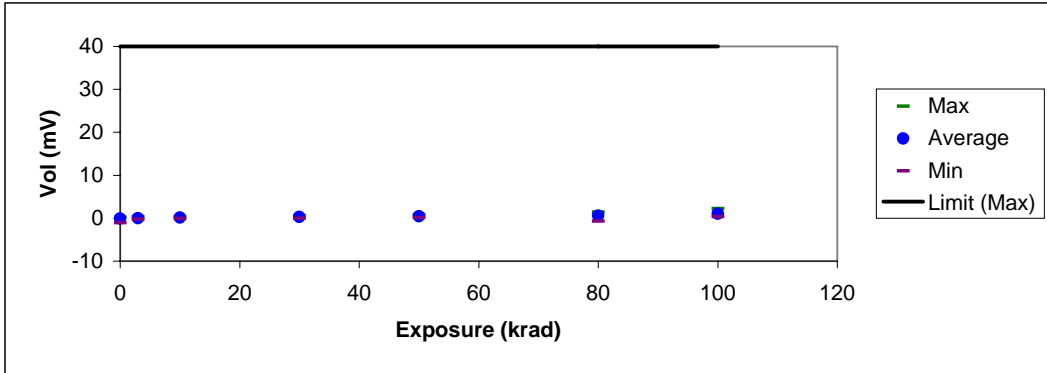
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	-0.149233	0.222597	-1.27282	0.296067	40	N/A	0	
LDR_BIAS	3	30	-0.0368981	0.196317	-0.197374	0.0939966	40	N/A	0.03225	-1.06
LDR_BIAS	10	30	0.0399964	0.349217	-1.21787	0.258999	40	N/A	0.14812	-6.89
LDR_BIAS	30	30	0.201044	0.501612	-0.0330345	0.141439	40	N/A	0.31177	1.81
LDR_BIAS	50	30	0.296841	0.651617	0.0744739	0.16302	40	N/A	0.37005	1.13
LDR_BIAS	80	30	0.568443	2.50983	-1.11992	0.52621	40	N/A	0.65146	1.17
LDR_BIAS	100	30	0.876658	1.56801	0.227375	0.328539	40	N/A	1.00906	1.24
LDR_UNBIAS	0	30	-0.114545	0.174815	-1.04636	0.213799	40	N/A	0	
LDR_UNBIAS	3	30	-0.0124668	0.353995	-0.230821	0.112358	40	N/A	0.03797	1.87
LDR_UNBIAS	10	30	0.123848	0.346828	-0.0545362	0.113682	40	N/A	0.20162	1.40
LDR_UNBIAS	30	30	0.289884	0.578062	0.00280163	0.139258	40	N/A	0.38678	1.23
LDR_UNBIAS	50	30	0.399847	0.804517	0.155702	0.203101	40	N/A	0.45436	0.91
LDR_UNBIAS	80	30	0.615368	1.39599	-0.686121	0.429594	40	N/A	0.74293	1.10
LDR_UNBIAS	100	30	0.997735	2.18781	0.382158	0.454992	40	N/A	1.04464	1.37
HDR_BIAS	0	31	-0.0500238	0.862757	-0.689453	0.302179	40	N/A	0	
HDR_BIAS	3	31	-0.23963	0.0868942	-1.602	0.38033	40	N/A	-0.03055	
HDR_BIAS	10	31	-0.155038	0.309073	-1.29047	0.314556	40	N/A	-0.0215	
HDR_BIAS	30	31	0.0376272	0.423745	-1.42999	0.335091	40	N/A	0.17201	
HDR_BIAS	50	31	0.236826	0.583303	-0.0531057	0.166697	40	N/A	0.32679	
HDR_BIAS	80	31	0.402244	2.54414	-2.20968	0.715846	40	N/A	0.55852	
HDR_BIAS	100	31	0.891798	6.27336	-0.981359	1.38683	40	N/A	0.81364	
HDR_UNBIAS	0	30	-0.0526781	1.29804	-0.301987	0.267996	40	N/A	0	
HDR_UNBIAS	3	30	-0.150575	0.287101	-1.3421	0.298445	40	N/A	0.02031	
HDR_UNBIAS	10	30	-0.00630104	0.31577	-1.09603	0.244805	40	N/A	0.14403	
HDR_UNBIAS	30	30	0.437265	3.71429	-0.0187	0.766021	40	N/A	0.31511	
HDR_UNBIAS	50	30	0.367218	1.60095	-0.991416	0.423925	40	N/A	0.5012	
HDR_UNBIAS	80	30	0.602802	1.07875	0.287101	0.229577	40	N/A	0.67629	
HDR_UNBIAS	100	30	0.698657	1.33627	-0.0951504	0.285562	40	N/A	0.76349	

Plot of the average readings for each radiation/bias condition

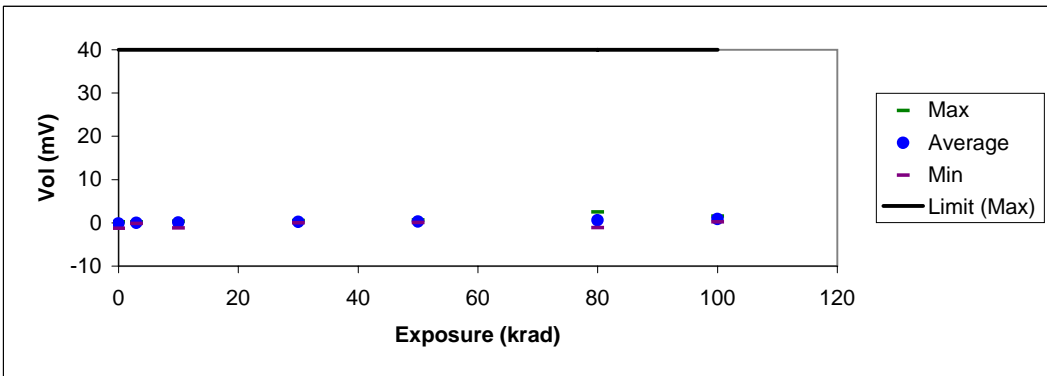


TEST ID: 2019 Output Voltage Low; Vol

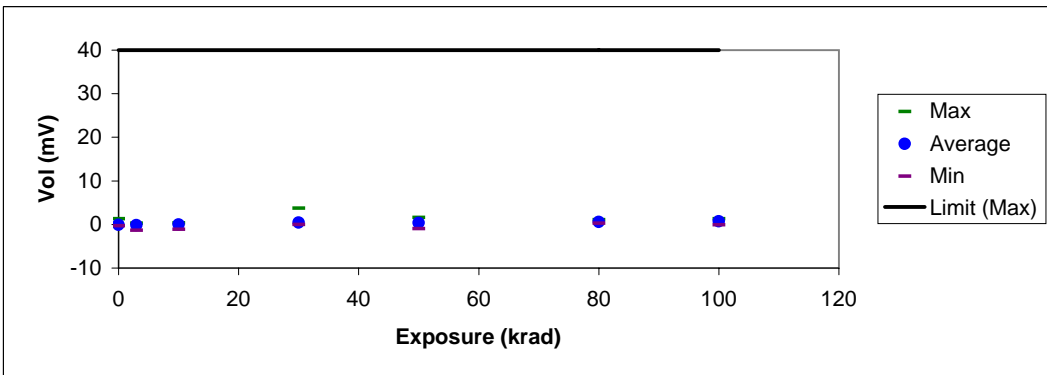
Low dose rate unbiased



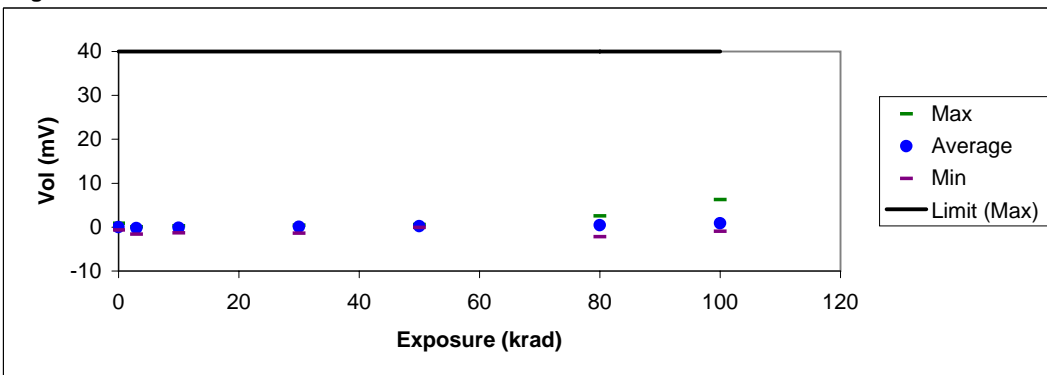
Low dose rate biased



High dose rate unbiased



High dose rate biased



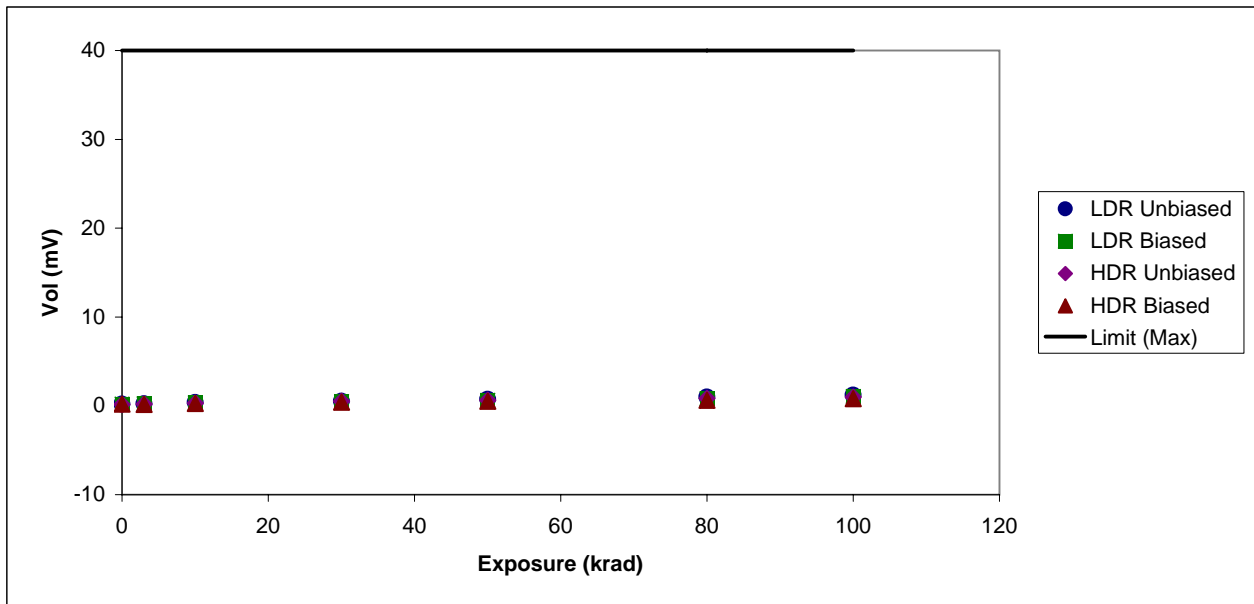
**TEST ID: 1020 Output Voltage Low; Vol**

+Vcc=5V, RL=10K (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

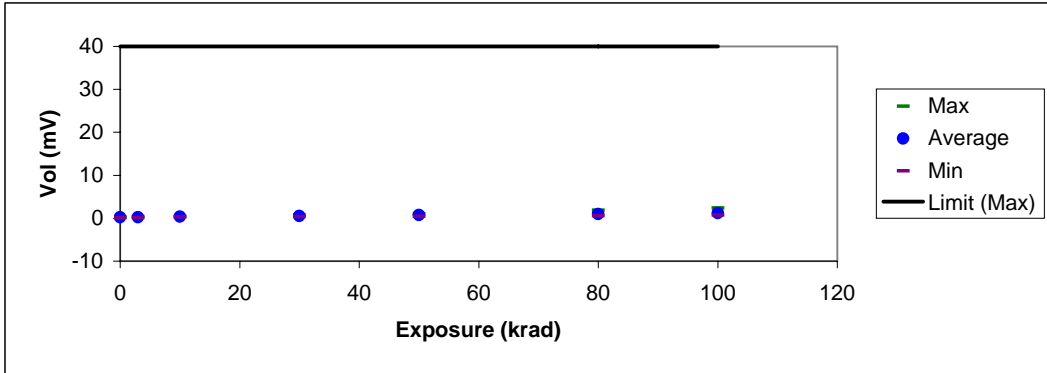
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	0.186044	0.277545	0.076863	0.0563235	40	N/A	0	
LDR_BIAS	3	30	0.227693	0.382664	0.134201	0.0654988	40	N/A	0.04539	-2.11
LDR_BIAS	10	30	0.339053	0.50639	0.201095	0.0780405	40	N/A	0.13618	1.43
LDR_BIAS	30	30	0.494415	0.725678	0.308603	0.0998077	40	N/A	0.29096	1.38
LDR_BIAS	50	30	0.630192	0.964079	0.439496	0.139161	40	N/A	0.41878	1.43
LDR_BIAS	80	30	0.791737	1.20299	0.229764	0.255362	40	N/A	0.5623	1.26
LDR_BIAS	100	30	1.0503	1.5704	0.575673	0.29517	40	N/A	0.82988	1.43
LDR_UNBIAS	0	30	0.208182	0.299047	0.150924	0.0391937	40	N/A	0	
LDR_UNBIAS	3	30	0.239081	0.363552	0.115088	0.0680589	40	N/A	0.05137	4.78
LDR_UNBIAS	10	30	0.360948	0.468164	0.251265	0.063334	40	N/A	0.1529	1.21
LDR_UNBIAS	30	30	0.524547	0.708954	0.382664	0.0949698	40	N/A	0.30529	0.89
LDR_UNBIAS	50	30	0.723306	1.05009	0.451441	0.164373	40	N/A	0.51742	1.21
LDR_UNBIAS	80	30	0.969299	1.82228	0.55656	0.290281	40	N/A	0.78449	1.24
LDR_UNBIAS	100	30	1.21042	2.35693	0.725678	0.397248	40	N/A	0.97681	1.25
HDR_BIAS	0	31	0.196213	0.814976	0.0328989	0.159031	40	N/A	0	
HDR_BIAS	3	31	0.171155	0.289961	0.0200017	0.0675335	40	N/A	-0.0215	
HDR_BIAS	10	31	0.256004	0.354464	0.138016	0.0611696	40	N/A	0.09556	
HDR_BIAS	30	31	0.401631	0.690302	0.262244	0.11345	40	N/A	0.21023	
HDR_BIAS	50	31	0.512283	1.21538	0.26607	0.205653	40	N/A	0.29334	
HDR_BIAS	80	31	0.633118	1.12077	0.325796	0.196826	40	N/A	0.44624	
HDR_BIAS	100	31	0.793285	1.20582	0.433747	0.203997	40	N/A	0.57952	
HDR_UNBIAS	0	30	0.17163	0.270378	0.0983646	0.0458833	40	N/A	0	
HDR_UNBIAS	3	30	0.19114	0.310992	0.0696957	0.0563478	40	N/A	0.01075	
HDR_UNBIAS	10	30	0.298472	0.460997	0.177204	0.0747457	40	N/A	0.12662	
HDR_UNBIAS	30	30	0.525946	0.744791	0.349217	0.113958	40	N/A	0.34232	
HDR_UNBIAS	50	30	0.636978	0.956912	0.403659	0.162372	40	N/A	0.42714	
HDR_UNBIAS	80	30	0.845231	1.2436	0.58284	0.177359	40	N/A	0.63448	
HDR_UNBIAS	100	30	0.977076	1.39838	0.685064	0.197845	40	N/A	0.78329	

Plot of the average readings for each radiation/bias condition

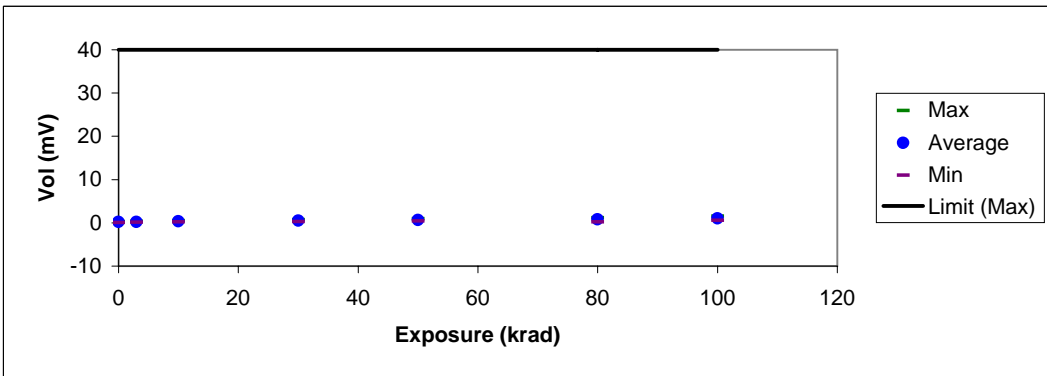


TEST ID: 1020 Output Voltage Low; Vol

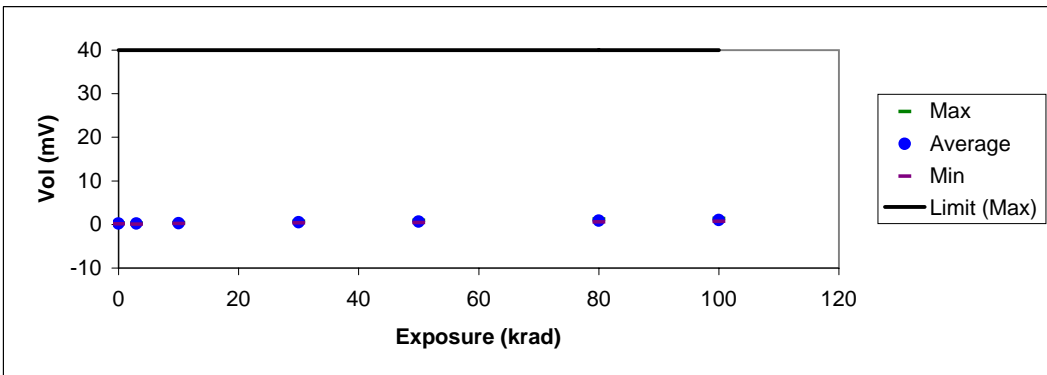
Low dose rate unbiased



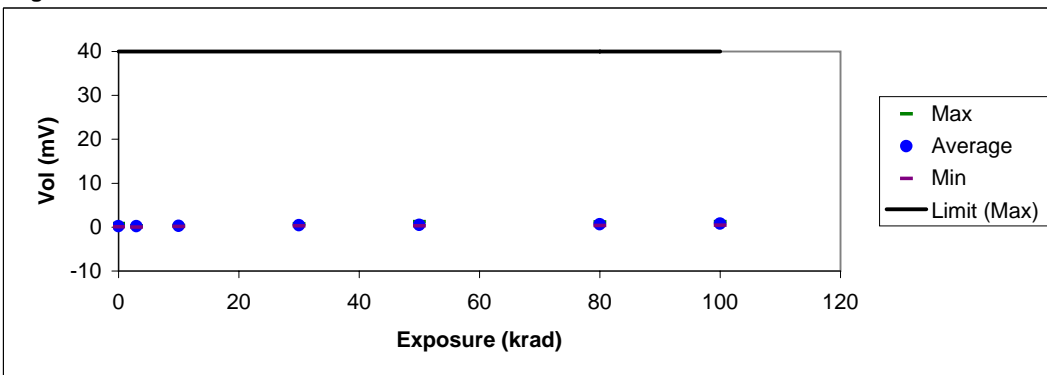
Low dose rate biased



High dose rate unbiased



High dose rate biased



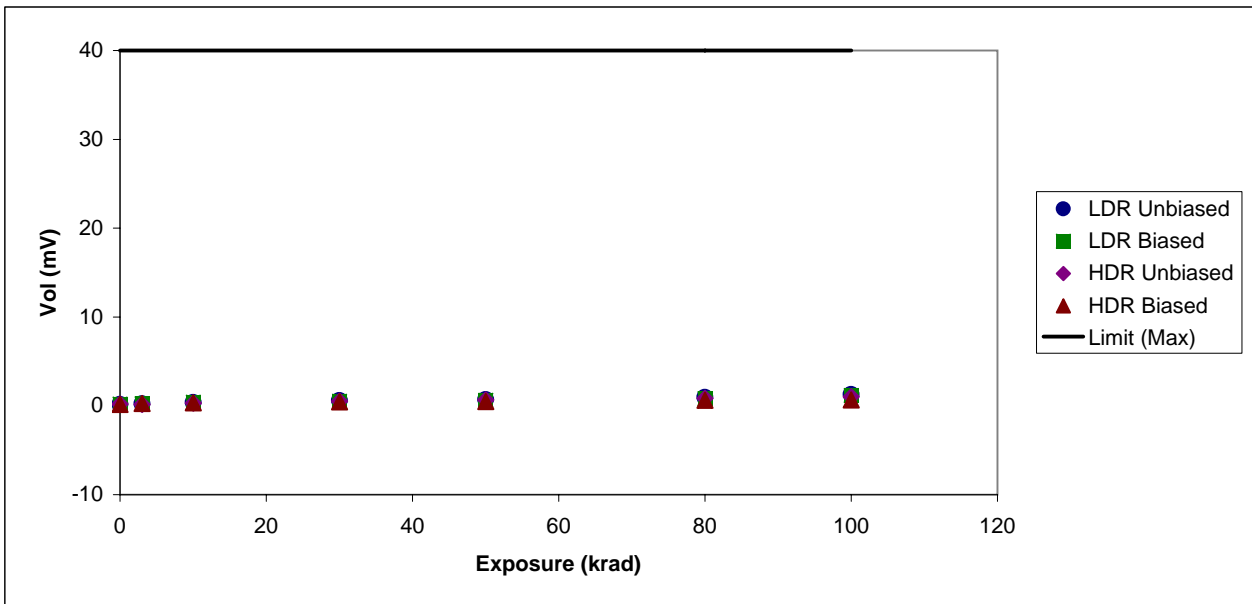
**TEST ID: 2020 Output Voltage Low; Vol**

+Vcc=5V, RL=10K (mV)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

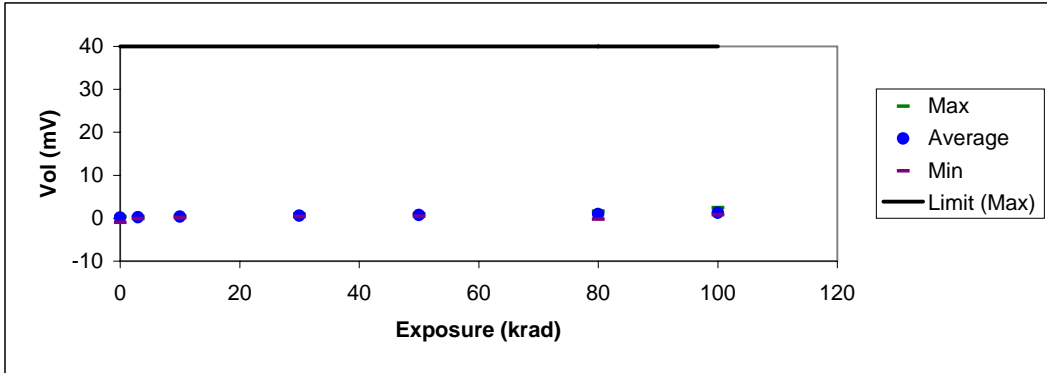
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIAS	0	30	0.207403	0.404166	-0.13048	0.101401	40	N/A	0	
LDR_BIAS	3	30	0.248319	0.380275	0.134201	0.0679817	40	N/A	0.02986	0.46
LDR_BIAS	10	30	0.4001	2.62451	0.177204	0.424518	40	N/A	0.13498	0.64
LDR_BIAS	30	30	0.517317	0.837458	0.303825	0.118283	40	N/A	0.30649	1.01
LDR_BIAS	50	30	0.614731	0.870905	0.404166	0.121516	40	N/A	0.39727	1.07
LDR_BIAS	80	30	0.815372	1.32193	0.076863	0.270648	40	N/A	0.61537	1.20
LDR_BIAS	100	30	1.16635	3.44432	0.616287	0.513006	40	N/A	0.84182	1.32
LDR_UNBIAS	0	30	0.171299	0.325327	-0.969914	0.22847	40	N/A	0	
LDR_UNBIAS	3	30	0.244496	0.353995	-0.0760378	0.0843898	40	N/A	0.03345	1.75
LDR_UNBIAS	10	30	0.371631	0.50639	0.0983646	0.100504	40	N/A	0.16126	1.21
LDR_UNBIAS	30	30	0.600589	0.937799	0.363552	0.131051	40	N/A	0.41016	1.01
LDR_UNBIAS	50	30	0.700899	1.04053	0.460997	0.151257	40	N/A	0.54105	1.18
LDR_UNBIAS	80	30	0.936636	1.61204	-0.228432	0.344859	40	N/A	0.77254	1.23
LDR_UNBIAS	100	30	1.26502	2.45249	0.773459	0.393029	40	N/A	1.04942	1.37
HDR_BIAS	0	31	0.175609	0.85559	-0.361228	0.234794	40	N/A	0	
HDR_BIAS	3	31	0.269789	3.52527	-0.863851	0.637508	40	N/A	0.0645	
HDR_BIAS	10	31	0.321873	0.61436	0.0319468	0.13961	40	N/A	0.21023	
HDR_BIAS	30	31	0.440495	0.697469	0.1944	0.134891	40	N/A	0.30239	
HDR_BIAS	50	31	0.497311	0.900029	-0.0158335	0.205278	40	N/A	0.37218	
HDR_BIAS	80	31	0.633367	2.48442	-1.13758	0.546844	40	N/A	0.51262	
HDR_BIAS	100	31	0.662828	1.48961	-0.685627	0.542776	40	N/A	0.63685	
HDR_UNBIAS	0	30	0.202591	0.499222	0.0314705	0.0938445	40	N/A	0	
HDR_UNBIAS	3	30	0.158096	0.48011	-0.910694	0.255507	40	N/A	0.01911	
HDR_UNBIAS	10	30	0.304633	0.649227	-0.841411	0.246668	40	N/A	0.13353	
HDR_UNBIAS	30	30	0.518938	1.25316	-0.218876	0.269224	40	N/A	0.40803	
HDR_UNBIAS	50	30	0.657867	1.05009	0.134201	0.212481	40	N/A	0.45794	
HDR_UNBIAS	80	30	0.848211	1.33388	0.353995	0.213089	40	N/A	0.62851	
HDR_UNBIAS	100	30	1.01559	1.49395	0.723289	0.216937	40	N/A	0.76537	

Plot of the average readings for each radiation/bias condition

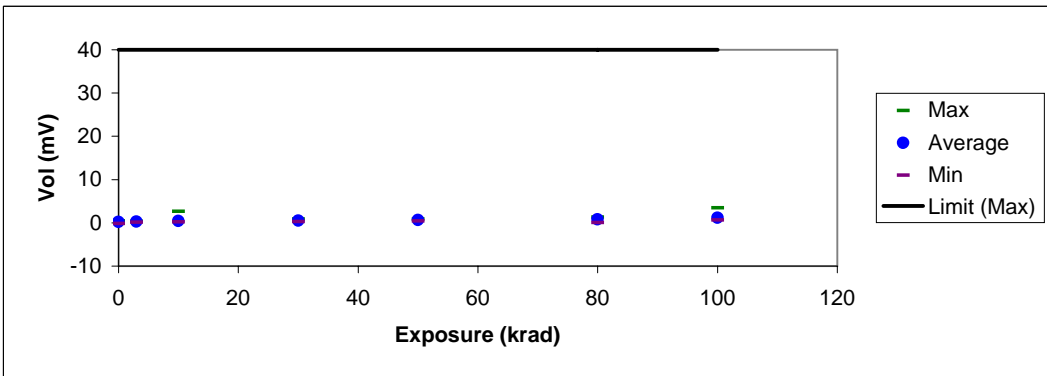


TEST ID: 2020 Output Voltage Low; Vol

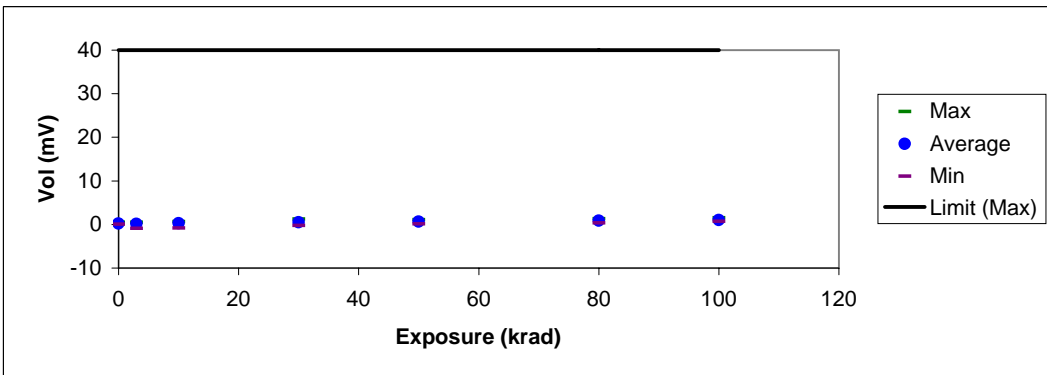
Low dose rate unbiased



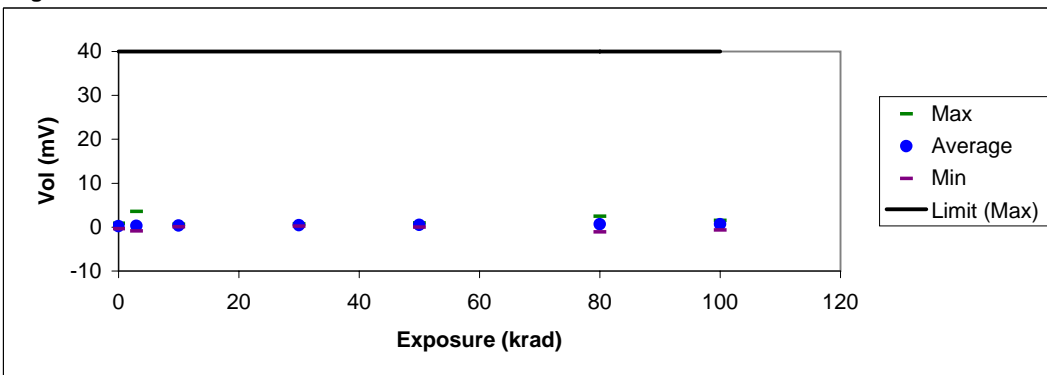
Low dose rate biased



High dose rate unbiased



High dose rate biased



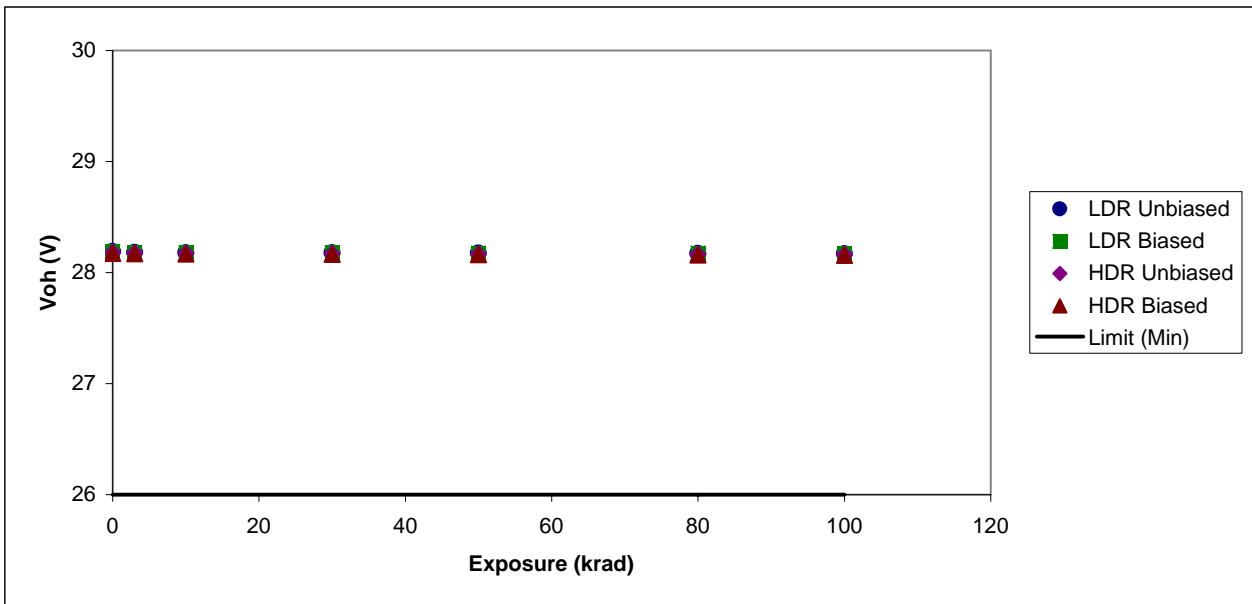
**TEST ID: 1021 Output Voltage High; Voh**

RL=2K (V)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

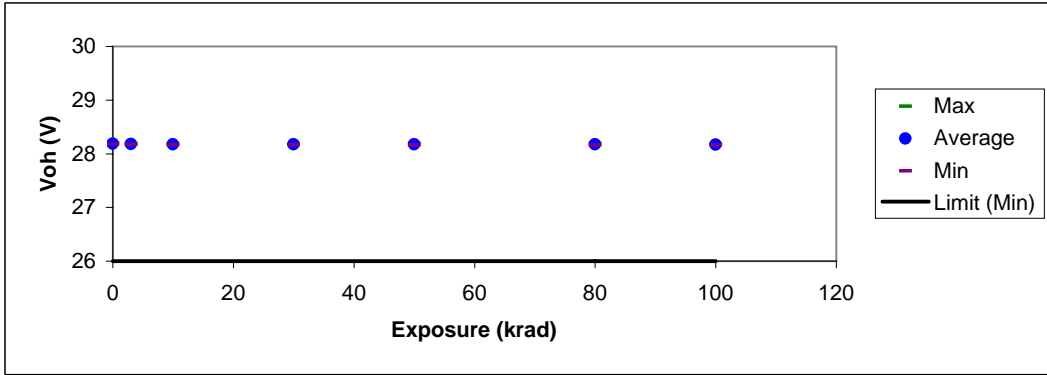
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	28.1895	28.211	28.179	0.00616318	N/A	26	0	
LDR_BIASED	3	30	28.1796	28.1862	28.1693	0.00378235	N/A	26	-0.01074	2.73
LDR_BIASED	10	30	28.1791	28.1865	28.1703	0.00395323	N/A	26	-0.01055	1.59
LDR_BIASED	30	30	28.1792	28.1859	28.1741	0.00296643	N/A	26	-0.01109	1.37
LDR_BIASED	50	30	28.1762	28.1866	28.167	0.00651025	N/A	26	-0.01158	1.03
LDR_BIASED	80	30	28.1772	28.206	28.1637	0.00860872	N/A	26	-0.01402	1.02
LDR_BIASED	100	30	28.1731	28.1832	28.1634	0.00500461	N/A	26	-0.01704	0.97
LDR_UNBIAS	0	30	28.1897	28.1987	28.1839	0.00361502	N/A	26	0	
LDR_UNBIAS	3	30	28.1802	28.1866	28.173	0.00360969	N/A	26	-0.01085	1.82
LDR_UNBIAS	10	30	28.1776	28.1869	28.1701	0.00364033	N/A	26	-0.01266	1.61
LDR_UNBIAS	30	30	28.1781	28.1834	28.1712	0.00325823	N/A	26	-0.01128	1.02
LDR_UNBIAS	50	30	28.1752	28.1938	28.1657	0.00708969	N/A	26	-0.01514	1.03
LDR_UNBIAS	80	30	28.1731	28.193	28.1645	0.00511641	N/A	26	-0.01694	0.94
LDR_UNBIAS	100	30	28.1694	28.1789	28.1633	0.00328327	N/A	26	-0.02035	1.08
HDR_BIASED	0	31	28.1731	28.1812	28.1635	0.00417174	N/A	26	0	
HDR_BIASED	3	31	28.1687	28.1778	28.1578	0.00562816	N/A	26	-0.00394	
HDR_BIASED	10	31	28.1669	28.1749	28.1579	0.00405302	N/A	26	-0.00665	
HDR_BIASED	30	31	28.1646	28.1726	28.1559	0.00415904	N/A	26	-0.00809	
HDR_BIASED	50	31	28.1622	28.1803	28.1523	0.00653831	N/A	26	-0.01123	
HDR_BIASED	80	31	28.1587	28.1732	28.1463	0.00586916	N/A	26	-0.01376	
HDR_BIASED	100	31	28.1547	28.1646	28.1393	0.00576325	N/A	26	-0.01762	
HDR_UNBIAS	0	30	28.1819	28.202	28.174	0.00514658	N/A	26	0	
HDR_UNBIAS	3	30	28.1746	28.1796	28.1667	0.00342019	N/A	26	-0.00596	
HDR_UNBIAS	10	30	28.1722	28.1844	28.1622	0.00463511	N/A	26	-0.00788	
HDR_UNBIAS	30	30	28.1713	28.2072	28.1577	0.0077765	N/A	26	-0.01109	
HDR_UNBIAS	50	30	28.1678	28.1803	28.1605	0.00418721	N/A	26	-0.01473	
HDR_UNBIAS	80	30	28.1644	28.1809	28.1556	0.00520489	N/A	26	-0.01797	
HDR_UNBIAS	100	30	28.1624	28.1695	28.154	0.00386522	N/A	26	-0.01884	

Plot of the average readings for each radiation/bias condition

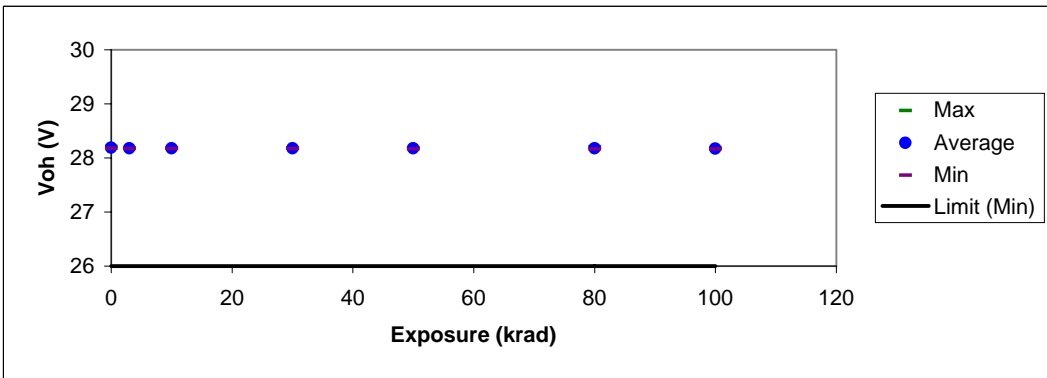


TEST ID: 1021 Output Voltage High; Voh

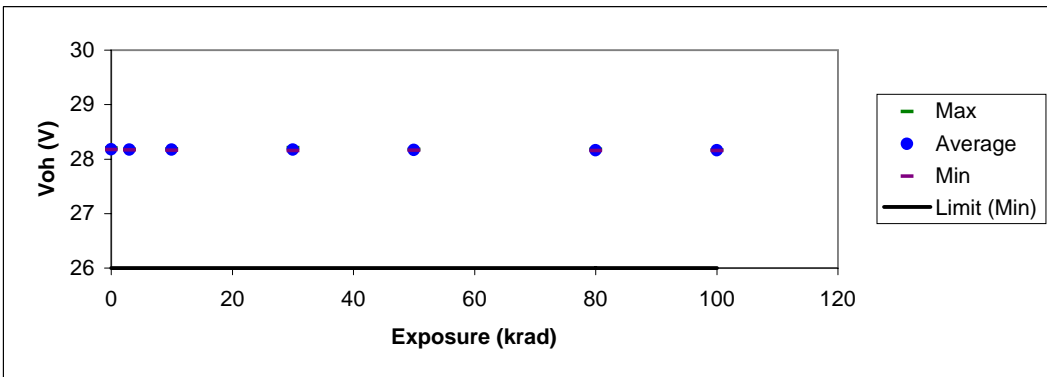
Low dose rate unbiased



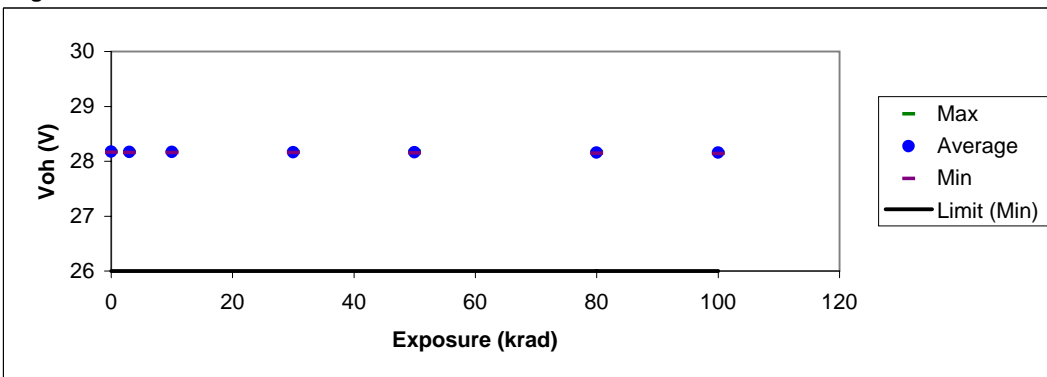
Low dose rate biased



High dose rate unbiased



High dose rate biased



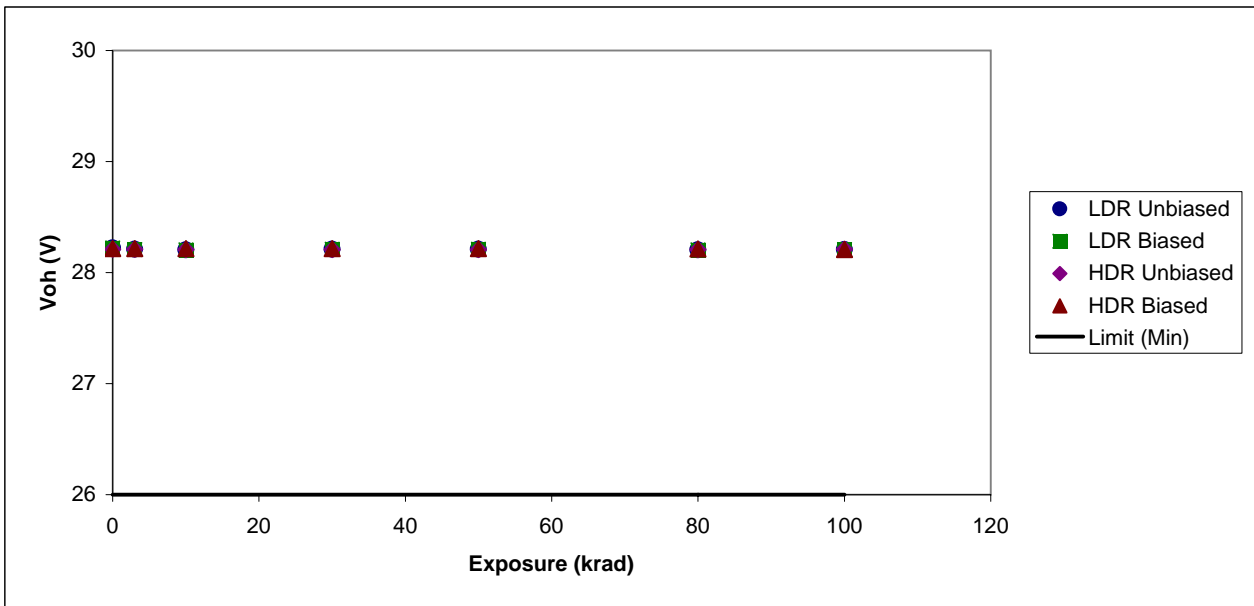
**TEST ID: 2021 Output Voltage High; Voh**

RL=2K (V)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

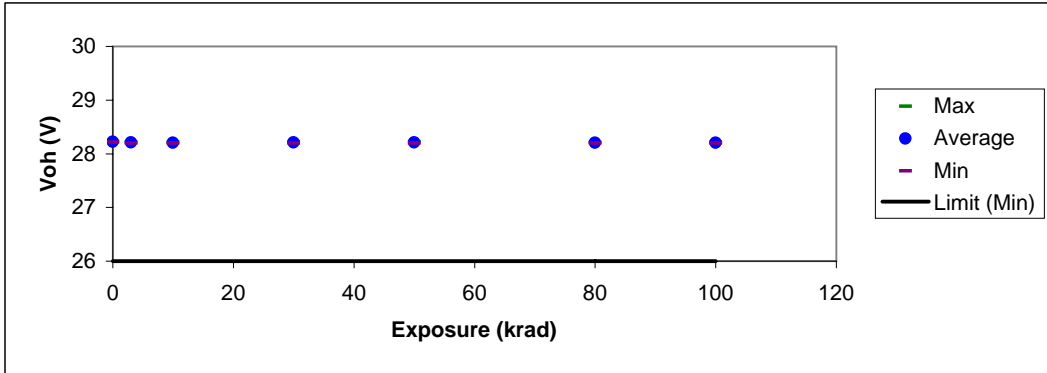
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	28.2212	28.2305	28.2101	0.00535236	N/A	26	0	
LDR_BIASED	3	30	28.2081	28.2186	28.1971	0.00481491	N/A	26	-0.01321	5.22
LDR_BIASED	10	30	28.2045	28.2131	28.1994	0.00378204	N/A	26	-0.01723	16.57
LDR_BIASED	30	30	28.2098	28.2254	28.1998	0.00573199	N/A	26	-0.01037	-345.67
LDR_BIASED	50	30	28.2091	28.2188	28.2009	0.00521511	N/A	26	-0.0107	133.75
LDR_BIASED	80	30	28.2041	28.2106	28.1982	0.00361742	N/A	26	-0.01809	19.45
LDR_BIASED	100	30	28.2075	28.2185	28.1764	0.00791406	N/A	26	-0.01454	12.43
LDR_UNBIAS	0	30	28.2218	28.2297	28.2153	0.00395946	N/A	26	0	
LDR_UNBIAS	3	30	28.2104	28.219	28.2007	0.00435055	N/A	26	-0.01273	5.81
LDR_UNBIAS	10	30	28.2057	28.2163	28.2006	0.00370964	N/A	26	-0.01699	6.56
LDR_UNBIAS	30	30	28.2102	28.2216	28.2024	0.0052979	N/A	26	-0.01134	2.43
LDR_UNBIAS	50	30	28.2093	28.2246	28.1993	0.00586388	N/A	26	-0.0127	2.78
LDR_UNBIAS	80	30	28.2041	28.211	28.197	0.00363427	N/A	26	-0.01888	5.64
LDR_UNBIAS	100	30	28.2076	28.2159	28.1982	0.00431909	N/A	26	-0.01405	5.98
HDR_BIASED	0	31	28.2157	28.2302	28.1981	0.00936428	N/A	26	0	
HDR_BIASED	3	31	28.2147	28.2243	28.1956	0.00634146	N/A	26	-0.00253	
HDR_BIASED	10	31	28.2167	28.2261	28.2074	0.00542853	N/A	26	-0.00104	
HDR_BIASED	30	31	28.2166	28.2251	28.1954	0.00637236	N/A	26	0.00003	
HDR_BIASED	50	31	28.2173	28.2263	28.2083	0.00586895	N/A	26	-0.00008	
HDR_BIASED	80	31	28.2132	28.2246	28.1675	0.0112432	N/A	26	-0.00093	
HDR_BIASED	100	31	28.2078	28.2225	28.1553	0.0139536	N/A	26	-0.00117	
HDR_UNBIAS	0	30	28.2115	28.221	28.2001	0.00590819	N/A	26	0	
HDR_UNBIAS	3	30	28.2104	28.218	28.2037	0.00381367	N/A	26	-0.00219	
HDR_UNBIAS	10	30	28.2088	28.2163	28.1842	0.00612546	N/A	26	-0.00259	
HDR_UNBIAS	30	30	28.2088	28.215	28.1756	0.00700389	N/A	26	-0.00467	
HDR_UNBIAS	50	30	28.2069	28.2162	28.1707	0.00839672	N/A	26	-0.00457	
HDR_UNBIAS	80	30	28.2085	28.2184	28.1974	0.00491555	N/A	26	-0.00335	
HDR_UNBIAS	100	30	28.2101	28.2216	28.2036	0.00506693	N/A	26	-0.00235	

Plot of the average readings for each radiation/bias condition

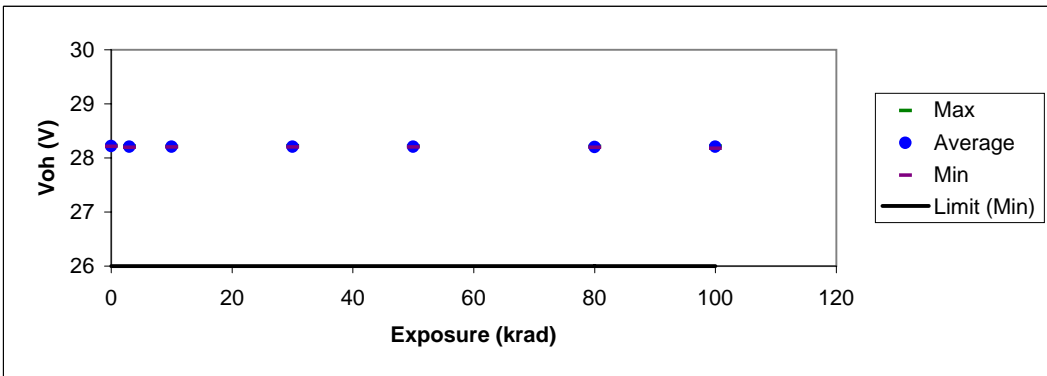


TEST ID: 2021 Output Voltage High; Voh

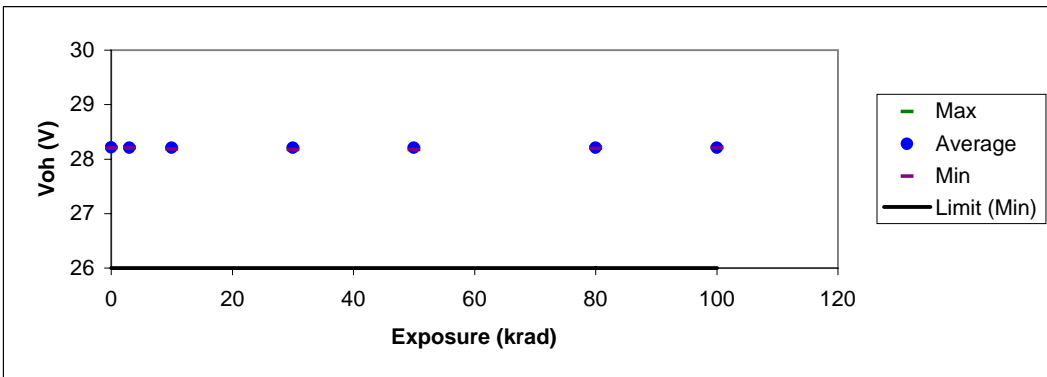
Low dose rate unbiased



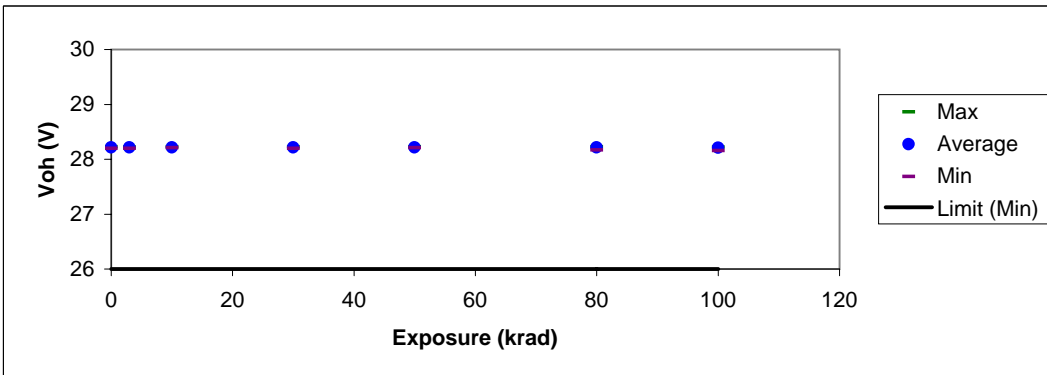
Low dose rate biased



High dose rate unbiased



High dose rate biased



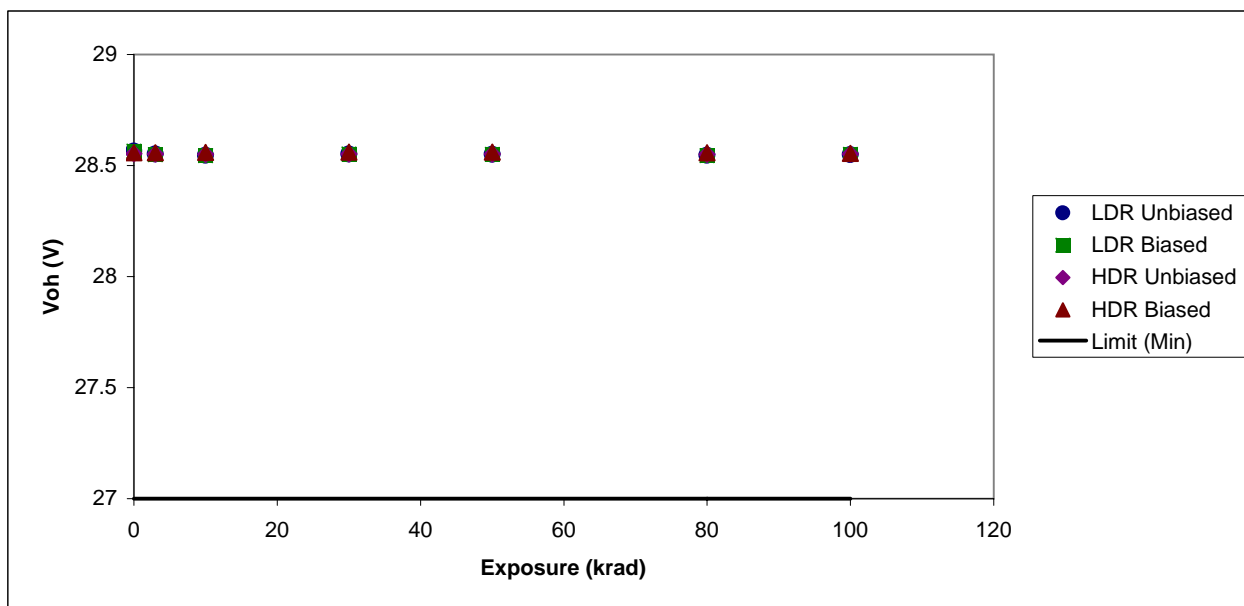
**TEST ID: 1022 Output Voltage High; Voh**

RL=10K (V)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

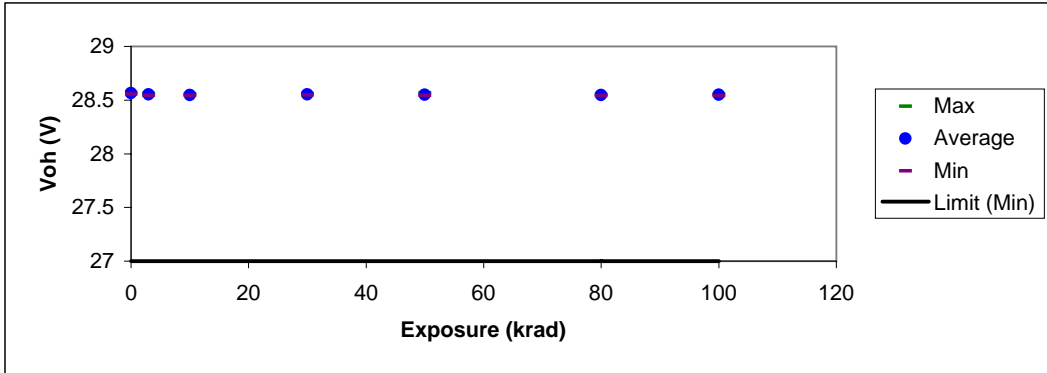
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	28.5646	28.5754	28.5523	0.00639231	N/A	27	0	
LDR_BIASED	3	30	28.5492	28.5579	28.5426	0.00383385	N/A	27	-0.01589	5.06
LDR_BIASED	10	30	28.5452	28.5512	28.5382	0.00268352	N/A	27	-0.02011	20.31
LDR_BIASED	30	30	28.5513	28.5661	28.5445	0.00449962	N/A	27	-0.01212	-12.24
LDR_BIASED	50	30	28.55	28.5613	28.5426	0.00467223	N/A	27	-0.01212	-10.63
LDR_BIASED	80	30	28.5452	28.5504	28.5359	0.0035337	N/A	27	-0.02086	-77.26
LDR_BIASED	100	30	28.5505	28.5622	28.5398	0.0058207	N/A	27	-0.01346	-29.26
LDR_UNBIAS	0	30	28.565	28.5702	28.5563	0.00396923	N/A	27	0	
LDR_UNBIAS	3	30	28.5518	28.5606	28.5447	0.00400873	N/A	27	-0.01494	4.96
LDR_UNBIAS	10	30	28.5464	28.5565	28.5425	0.0028912	N/A	27	-0.01915	4.78
LDR_UNBIAS	30	30	28.5517	28.5609	28.5461	0.00420986	N/A	27	-0.01352	2.75
LDR_UNBIAS	50	30	28.5504	28.5688	28.5431	0.00543424	N/A	27	-0.01403	3.19
LDR_UNBIAS	80	30	28.5455	28.5522	28.54	0.00269778	N/A	27	-0.0201	6.26
LDR_UNBIAS	100	30	28.5494	28.5556	28.5399	0.00349033	N/A	27	-0.0158	6.72
HDR_BIASED	0	31	28.5579	28.574	28.5423	0.00941526	N/A	27	0	
HDR_BIASED	3	31	28.558	28.5674	28.5497	0.00540494	N/A	27	-0.00314	
HDR_BIASED	10	31	28.5596	28.5682	28.5517	0.00478844	N/A	27	-0.00099	
HDR_BIASED	30	31	28.5599	28.5693	28.5531	0.00502383	N/A	27	0.00099	
HDR_BIASED	50	31	28.5603	28.5699	28.5515	0.00604982	N/A	27	0.00114	
HDR_BIASED	80	31	28.5583	28.5681	28.5458	0.00643606	N/A	27	0.00027	
HDR_BIASED	100	31	28.5541	28.5634	28.5367	0.0077923	N/A	27	0.00046	
HDR_UNBIAS	0	30	28.5539	28.5616	28.5453	0.00515149	N/A	27	0	
HDR_UNBIAS	3	30	28.5519	28.557	28.5463	0.00294824	N/A	27	-0.00301	
HDR_UNBIAS	10	30	28.5508	28.5556	28.5435	0.00316107	N/A	27	-0.00401	
HDR_UNBIAS	30	30	28.5517	28.5556	28.5443	0.00290947	N/A	27	-0.00491	
HDR_UNBIAS	50	30	28.5515	28.5574	28.5443	0.00354467	N/A	27	-0.0044	
HDR_UNBIAS	80	30	28.5508	28.5583	28.5422	0.0039401	N/A	27	-0.00321	
HDR_UNBIAS	100	30	28.5524	28.5604	28.5457	0.00406231	N/A	27	-0.00235	

Plot of the average readings for each radiation/bias condition

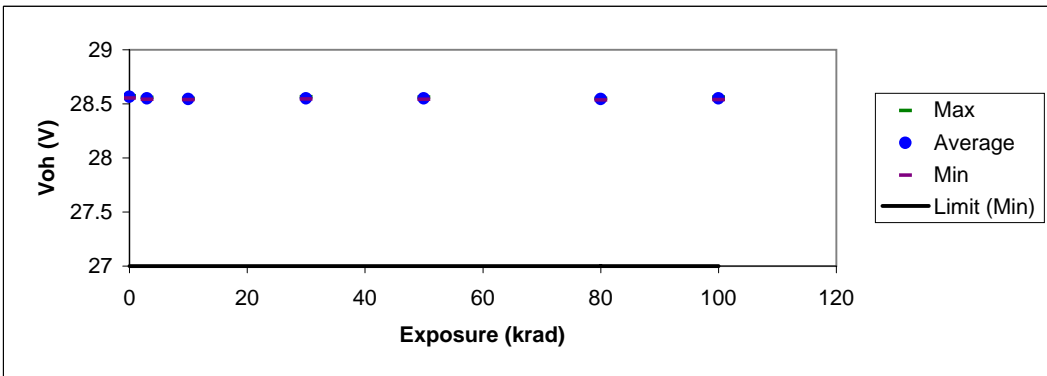


TEST ID: 1022 Output Voltage High; Voh

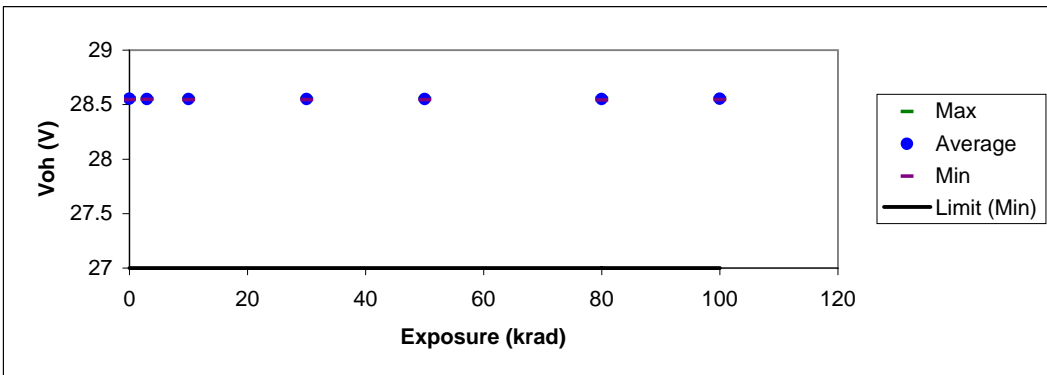
Low dose rate unbiased



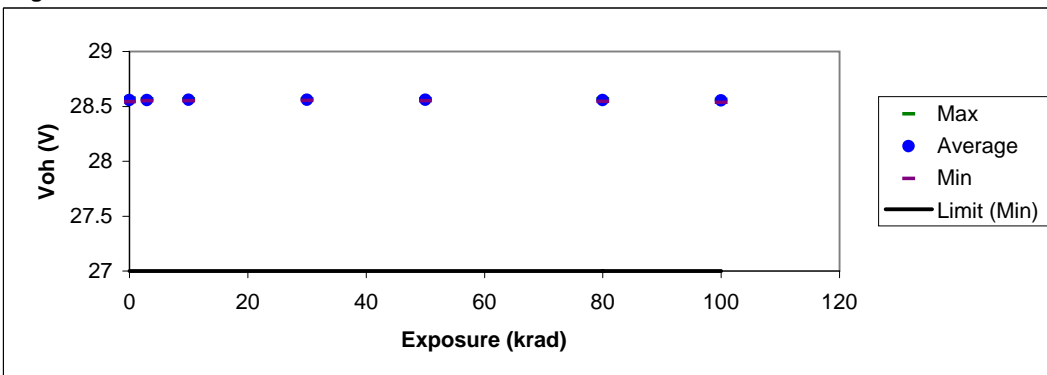
Low dose rate biased



High dose rate unbiased



High dose rate biased



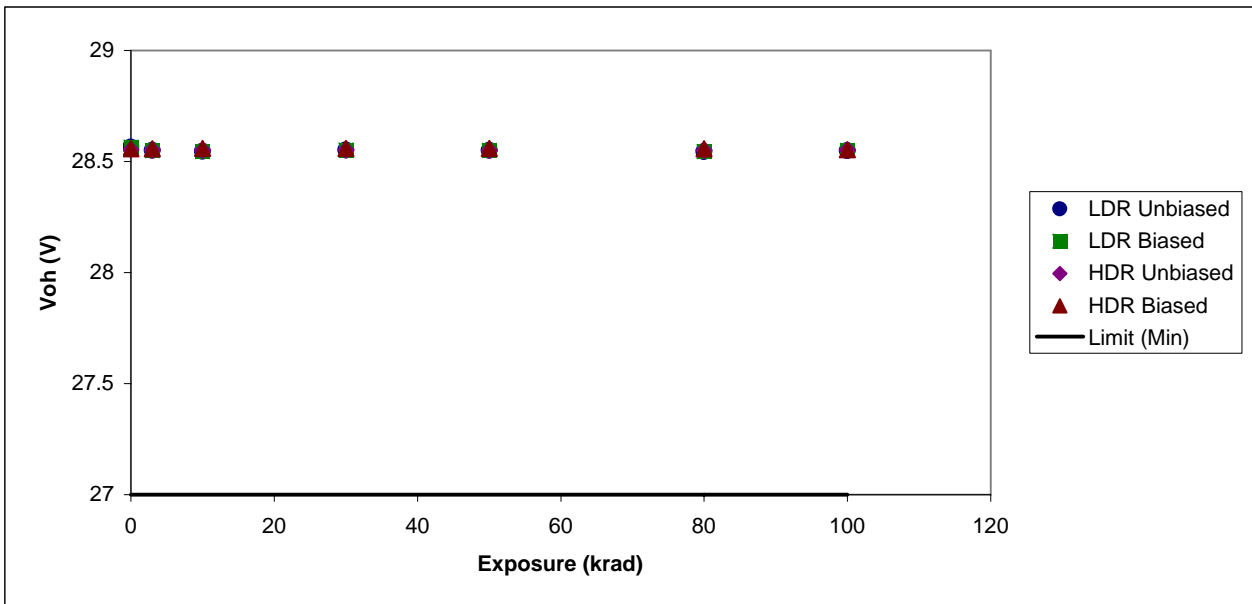
**TEST ID: 2022 Output Voltage High; Voh**

RL=10K (V)

LOT(s): 7W4453 7W4454 7W4455 7W4446 7W4451 7W4450

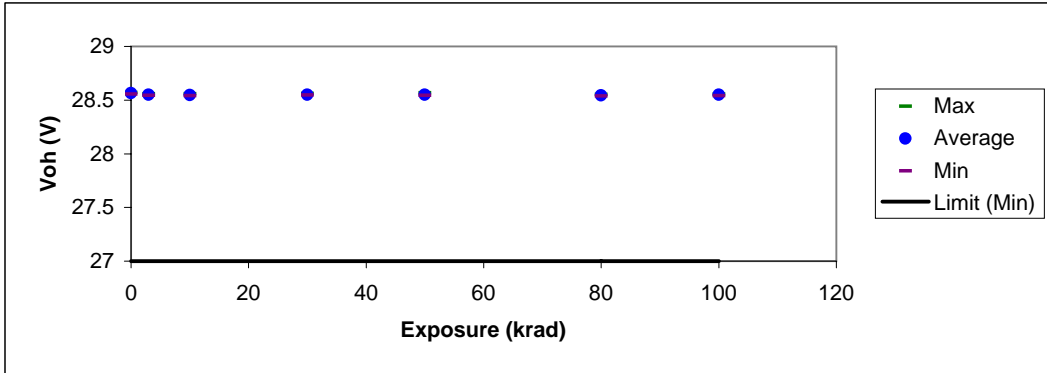
TEST_BIAS	DOSE(k)	OBS	AVG	MAX	MIN	SIGMA	UTL	LTL	Delta Median (from 0 rad)	Delta Ratio (to HDR)
LDR_BIASED	0	30	28.5644	28.5762	28.5515	0.00669174	N/A	27	0	
LDR_BIASED	3	30	28.5487	28.5584	28.5416	0.00375735	N/A	27	-0.01598	5.85
LDR_BIASED	10	30	28.5448	28.5524	28.5391	0.00276167	N/A	27	-0.02063	15.40
LDR_BIASED	30	30	28.5512	28.5661	28.544	0.00457844	N/A	27	-0.01122	-43.15
LDR_BIASED	50	30	28.5501	28.5593	28.5434	0.00452512	N/A	27	-0.01235	-10.12
LDR_BIASED	80	30	28.5452	28.5508	28.5375	0.00356208	N/A	27	-0.0205	78.85
LDR_BIASED	100	30	28.5501	28.5617	28.539	0.00515782	N/A	27	-0.01328	-22.90
LDR_UNBIAS	0	30	28.5645	28.5706	28.5561	0.00421048	N/A	27	0	
LDR_UNBIAS	3	30	28.5511	28.5584	28.544	0.00356336	N/A	27	-0.01487	4.91
LDR_UNBIAS	10	30	28.5461	28.5574	28.5416	0.00290727	N/A	27	-0.01947	5.85
LDR_UNBIAS	30	30	28.5514	28.561	28.5463	0.0044555	N/A	27	-0.0121	2.39
LDR_UNBIAS	50	30	28.5506	28.5674	28.5437	0.00540791	N/A	27	-0.01359	3.10
LDR_UNBIAS	80	30	28.5452	28.5525	28.5393	0.00277486	N/A	27	-0.02077	6.18
LDR_UNBIAS	100	30	28.5491	28.5556	28.5406	0.0031037	N/A	27	-0.0164	11.39
HDR_BIASED	0	31	28.5576	28.5734	28.5428	0.00946544	N/A	27	0	
HDR_BIASED	3	31	28.557	28.5682	28.5379	0.00639408	N/A	27	-0.00273	
HDR_BIASED	10	31	28.5587	28.568	28.552	0.00513484	N/A	27	-0.00134	
HDR_BIASED	30	31	28.5595	28.5704	28.5531	0.00518777	N/A	27	0.00026	
HDR_BIASED	50	31	28.5597	28.5692	28.5519	0.0059428	N/A	27	0.00122	
HDR_BIASED	80	31	28.557	28.5678	28.5457	0.00617065	N/A	27	-0.00026	
HDR_BIASED	100	31	28.5531	28.5632	28.5343	0.00779997	N/A	27	0.00058	
HDR_UNBIAS	0	30	28.5534	28.5618	28.5432	0.00561075	N/A	27	0	
HDR_UNBIAS	3	30	28.5516	28.5575	28.5469	0.00307477	N/A	27	-0.00303	
HDR_UNBIAS	10	30	28.5507	28.5573	28.5452	0.00311884	N/A	27	-0.00333	
HDR_UNBIAS	30	30	28.5513	28.5569	28.546	0.00301552	N/A	27	-0.00507	
HDR_UNBIAS	50	30	28.5509	28.5584	28.5447	0.00359342	N/A	27	-0.00439	
HDR_UNBIAS	80	30	28.5505	28.5588	28.5421	0.00411949	N/A	27	-0.00336	
HDR_UNBIAS	100	30	28.5521	28.5598	28.5461	0.00411672	N/A	27	-0.00144	

Plot of the average readings for each radiation/bias condition

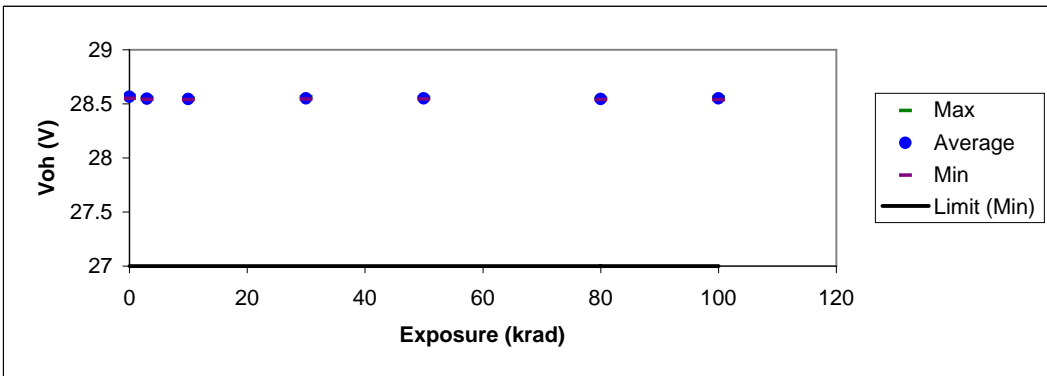


TEST ID: 2022 Output Voltage High; Voh

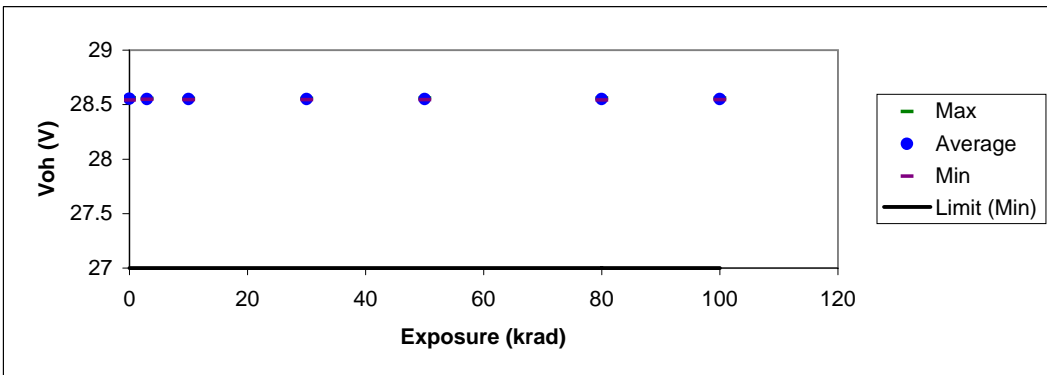
Low dose rate unbiased



Low dose rate biased



High dose rate unbiased



High dose rate biased

