

Radiation Report

# TPS7H1302-SP Neutron Displacement Damage (NDD) Characterization Report

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## Abstract

This report presents the effect of neutron displacement damage (NDD) on the TPS7H1302-SP, a charge pump positive-to-negative voltage inverters with an integrated negative low dropout regulator (LDO). The device accepts a positive input supply voltage range of 3V to 6.3V and deliver up to 400mA of output current, with integrated enable and power-good functionality.

The TPS7H1302-SP showed a strong degree of hardness to neutron irradiation up to fluence level  $1 \times 10^{13}$  n/cm<sup>2</sup>. The neutron irradiation test is a destructive test. Test procedure follows MIL-STD-883 Method 1017 as guidance. The purpose of this test is to determine the device susceptibility to non-ionizing energy loss (NIEL) degradation. Objectives of the test are, to detect and measure the degradation of critical device parameters as a function of neutron fluence and to determine if these parameters are within specified limits after exposure to a specified level of neutron fluence.

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## 1 Device Information

### 1.1 Product Description

The TPS7H1302-SP is a charge pump positive-to-negative voltage inverters with an integrated negative low dropout regulator (LDO). Both devices accept a positive input supply voltage range of 3V to 6.3V and deliver up to 400mA of output current, with integrated enable and power-good functionality.

The TPS7H1302 delivers a fixed  $-1.8\text{V}$  output voltage with a 1MHz (typical) charge pump switching frequency. By eliminating the need for external feedback resistors, the TPS7H1302 reduces both external component count and overall design size.

The TPS7H1302-SP is packaged in a 14-pin HBL ceramic flat package. A standard microcircuit drawing (SMD) is 5962R2421502VXC.

### 1.2 Device Details

[Table 1-1](#) lists the device information used in this NDD characterization.

**Table 1-1. Device and Exposure Details**

| NDD Exposure Details                     |                                                                                                        |
|------------------------------------------|--------------------------------------------------------------------------------------------------------|
| TI Device                                | TPS7H1301-SP                                                                                           |
| TI Part Name                             | 5962R2421502VXC                                                                                        |
| Package                                  | 14-pin HBL (CFP)                                                                                       |
| Technology                               | LBC7                                                                                                   |
| Quantity Tested                          | 12<br>+ 3 control units                                                                                |
| Exposure Facility                        | Fast Neutron Irradiation (FNI) Facility of University of Massachusetts Lowell Research Reactor (UMLRR) |
| Neutron Fluence (1-MeV equivalent) Level | $1 \times 10^{12}$ , $5 \times 10^{12}$ , $1 \times 10^{13}$ n/cm <sup>2</sup>                         |
| Irradiation Temperature                  | Ambient room temperature                                                                               |

## 2 Total Dose Test Setup

### 2.1 Test Overview

The TPS7H1302-SP was tested according to MIL-STD-883, Method 1017 as a guide for neutron irradiation. The TPS7H1302-SP was electrically tested using the production automated test equipment (ATE) program at an ambient room temperature of 25°C before and after neutron irradiation. All devices remained functional passing all parametric test limits.

### 2.2 Test Description and Facilities

The utilized test facility is the Fast Neutron Irradiation (FNI) Facility of University of Massachusetts Lowell Research Reactor. The neutron fluence for this irradiation was measured utilizing ASTM E-265 "Measuring Reaction Rates and Fast Neutron Fluence by Radioactivation of Sulfur-32" and correlated to the measured reactor power level. All irradiation conditions required under ASTM 722 were met, this includes: neutron fluence, distribution and uncertainty. The Average Integrated Neutron Fluence, 1-MeV(Si) equivalent, reflects these factors. Detailed information of the radiation facility is available at the following link:

[UNIVERSITY OF MASSACHUSETTS LOWELL RESEARCH REACTOR](#)

### 2.3 Test Setup Details

Devices were irradiated at three fluence levels in unbiased conditions:  $1.0 \times 10^{12}$  n/cm<sup>2</sup>,  $5.0 \times 10^{12}$  n/cm<sup>2</sup> and  $1.0 \times 10^{13}$  n/cm<sup>2</sup>. See the details in [Table 2-1](#).

## 2.4 Test Configuration and Conditions

**Table 2-1. Neutron Irradiation Conditions**

| GROUP         | SAMPLE QTY | NEUTRON FLUENCE (n/cm <sup>2</sup> ) | BIAS   |
|---------------|------------|--------------------------------------|--------|
| A             | 4          | $1.0 \times 10^{12}$                 | Unbias |
| B             | 4          | $5.0 \times 10^{12}$                 | Unbias |
| C             | 4          | $1.0 \times 10^{13}$                 | Unbias |
| Control Units | 3          | N/A                                  | N/A    |

### 3 NDD Characterization Test Results

#### 3.1 NDD Characterization Summary

The results show that all devices were fully functional and within specification limits. A sample size of twelve units was exposed for neutron irradiation and an additional unirradiated control units were used as correlation.

Overall, the TPS7H1302-SP showed a strong degree of hardness to Neutron irradiation up to fluence level  $1 \times 10^{13} \text{ n/cm}^2$ . The measurements taken post-irradiation for each sample set showed a marginal shift for most parameters at each fluence level. The parameters that showed a greater degree of change between pre- and post- irradiation were still within the Electrical Performance Characteristics specified in the Data Sheet Electrical Parameters table. See Table 3-1 for the Data Sheet Electrical Parameters and Associated Tests. Electrical testing is done for pre- and post- neutron irradiation by ATE. ATE electrical test is done at an ambient room temperature of 25°C. See Appendix A for NDD report up to  $1.0 \times 10^{13} \text{ n/cm}^2$ .

The parameters post-irradiation were still within the electrical performance characteristics specified in the data sheet electrical parameters.

See [TPS7H130X-SP 3V to 6.3V Input, 400mA, -6V to -0.6V Radiation Hardened Switched Capacitor Voltage Inverter with Integrated Low Dropout Regulator](#) for the data sheet electrical parameters and associated tests.

See Appendix A for NDD report up to  $1 \times 10^{13} \text{ n/cm}^2$ .

#### 3.2 Specification Compliance Matrix

Over  $3\text{V} \leq V_{\text{IN}} \leq 6.3\text{V}$ ,  $V_{\text{OUT}}(\text{set}) = -1.8\text{V}$ ,  $I_{\text{OUT}} = 10\text{mA}$ ,  $C_{\text{REF}} = 47\text{nF}$ , over operating temperature range ( $T_{\text{A}} = -55^\circ\text{C}$  to  $125^\circ\text{C}$ ); unless otherwise specified in the Test Conditions column. Typical values are at  $T_{\text{A}} = 25^\circ\text{C}$ , unless otherwise noted; includes RLAT at  $T_{\text{A}} = 25^\circ\text{C}$ .

**Table 3-1. Specification Compliance Matrix**

| PARAMETER                   |                                                                 | TEST CONDITIONS                                                       |  | MIN   | TYP   | MAX        | UNIT | Test No                           |
|-----------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------|--|-------|-------|------------|------|-----------------------------------|
| POWER SUPPLIES and CURRENTS |                                                                 |                                                                       |  |       |       |            |      |                                   |
| V <sub>UVLOR</sub>          | Input supply UVLO rising                                        |                                                                       |  |       | 2.7   |            | V    | 60.2                              |
| V <sub>UVLOF</sub>          | Input supply UVLO falling                                       |                                                                       |  |       | 2.53  |            | V    | 60.3                              |
| V <sub>UVLO(HYS)</sub>      | Input supply UVLO Hysteresis                                    |                                                                       |  |       | 220   |            | mV   | 60.4                              |
| I <sub>Q</sub>              | Quiescent Current                                               | I = 0A, V <sub>EN</sub> = 7V                                          |  |       | 12    | 45         | mA   | 31.3,<br>31.5,<br>205.2,<br>205.4 |
| I <sub>SHDN</sub>           | Shutdown Current                                                | V <sub>EN</sub> = 0V, I <sub>OUT</sub> = 0A                           |  |       | 0.8   | 1.5        | mA   | 31.2,<br>31.4,<br>205.1,<br>205.3 |
| I <sub>FB</sub>             | Feedback leakage current                                        | V <sub>FB</sub> = -0.6V                                               |  |       | 25    | 100        | nA   | 31.1                              |
| ENABLE                      |                                                                 |                                                                       |  |       |       |            |      |                                   |
| V <sub>EN(rising)</sub>     | Enable rising threshold (turn-on)                               |                                                                       |  | 0.57  | 0.6   | 0.625      | V    | 65.2,<br>65.6                     |
| V <sub>EN(falling)</sub>    | Enable falling threshold (turn-off)                             |                                                                       |  | 0.445 | 0.5   | 0.555      | V    | 65.3,<br>65.7                     |
| t <sub>EN(delay)</sub>      | EN propagation delay,                                           | EN high to PG high at<br>V <sub>IN</sub> = 5V V <sub>IN</sub> = -1.8V |  |       | 14    | 18         | ms   | 65.4,<br>65.8                     |
| I <sub>EN(LKG)</sub>        | Enable leakage current                                          | V <sub>EN</sub> = 7V                                                  |  |       | 25    | 330        | nA   | 65.1,<br>65.5                     |
| POWER GOOD                  |                                                                 |                                                                       |  |       |       |            |      |                                   |
| V <sub>PG(rise)</sub>       | Power good rising threshold<br>as a percent of V <sub>OUT</sub> | SR V <sub>OUT</sub> = 10V/s                                           |  | 91.8% | 94.8% | 98.05<br>% |      | 71.3,<br>71.6                     |

**Table 3-1. Specification Compliance Matrix (continued)**

| PARAMETER                            |                                                               | TEST CONDITIONS                                                                                   |                                     | MIN     | TYP  | MAX    | UNIT | Test No      |
|--------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------|---------|------|--------|------|--------------|
| V <sub>PG(fall)</sub>                | Power good falling threshold as a percent of V <sub>OUT</sub> | SR V <sub>OUT</sub> = 10V/s                                                                       |                                     | 86.25 % | 90%  | 94.1%  |      | 71.4, 71.7   |
| V <sub>PG(OL)</sub>                  | Power good output low                                         | I <sub>PG(SINK)</sub> = 2mA                                                                       |                                     |         | 90   | 190    | mV   | 70.3, 70.4   |
| V <sub>IN(MIN_PG)</sub>              | Minimum V <sub>IN</sub> for valid PG (V <sub>PG</sub> < 0.5V) | I <sub>PG(sink)</sub> = 0.5mA                                                                     |                                     |         | 0.8  | 1      | V    | 71.1, 71.2,  |
| I <sub>PG(LKG)</sub>                 | Power good leakage                                            | V <sub>PG</sub> = 7V, V <sub>FB</sub> = -0.6V                                                     |                                     |         | 0.05 | 2      | μA   | 70.1, 70.2   |
| CHARGE PUMP                          |                                                               |                                                                                                   |                                     |         |      |        |      |              |
| R <sub>DISCHARGE</sub>               | CPOUT discharge resistance                                    | C <sub>CPOUT</sub> = 10μF                                                                         | V <sub>CPOUT</sub> = -0.3V          |         | 75   |        | Ω    | 75.2, 75.4   |
| t <sub>DISCHARGE</sub>               | CPOUT discharge time (CPOUT > -0.3V) to GND                   | C <sub>CPOUT</sub> = 10μF                                                                         |                                     |         | 6.5  |        | ms   | 75.1, 75.3   |
| f <sub>SW</sub>                      | Switching frequency                                           |                                                                                                   |                                     | 800     | 1000 | 1200   | kHz  | 35.1 to 35.6 |
| R <sub>DS(ON1)</sub>                 | Switch array MOSFET1 drain source resistance                  | I <sub>RDSON</sub> = 100mA                                                                        |                                     |         | 300  | 480    | mΩ   | 40.2         |
| R <sub>DS(ON2)</sub>                 | Switch array MOSFET2 drain source resistance                  | I <sub>RDSON</sub> = 100mA                                                                        |                                     |         | 175  | 345    |      | 40.5         |
| R <sub>DS(ON3)</sub>                 | Switch array MOSFET3 drain source resistance                  | I <sub>RDSON</sub> = 100mA                                                                        |                                     |         | 235  | 300    |      | 40.3         |
| R <sub>DS(ON4)</sub>                 | Switch array MOSFET4 drain source resistance                  | I <sub>RDSON</sub> = 100mA                                                                        |                                     |         | 220  | 370    |      | 40.6         |
| DROPOUT                              |                                                               |                                                                                                   |                                     |         |      |        |      |              |
| I <sub>DO</sub>                      | Dropout current                                               | V <sub>OUT(set)</sub> = -1.8V<br>I <sub>OUT(meas.)</sub> = 98% × V <sub>OUT(NOM)</sub>            | V <sub>IN</sub> = 3                 | 75      | 125  |        | mA   | 44.1         |
|                                      |                                                               |                                                                                                   | V <sub>IN</sub> = 3.3               | 100     | 150  |        |      | 44.2         |
|                                      |                                                               |                                                                                                   | V <sub>IN</sub> = 4                 | 200     | 300  |        |      | 44.3         |
|                                      |                                                               |                                                                                                   | V <sub>IN</sub> = 5                 | 400     |      |        |      | 44.4         |
|                                      |                                                               |                                                                                                   | V <sub>IN</sub> = 6                 | 400     |      |        |      | 44.5         |
| ACCURACY                             |                                                               |                                                                                                   |                                     |         |      |        |      |              |
| V <sub>ACC</sub>                     | Output voltage accuracy                                       | -5V ≤ V <sub>OUT</sub> ≤ V <sub>CP(OUT)</sub> - V <sub>DO</sub><br>1mA ≤ I <sub>OUT</sub> ≤ 250mA |                                     | -1.5%   |      | 1.5%   |      | 50.1-50.7,   |
|                                      |                                                               | 400mA                                                                                             |                                     | -1.5%   |      | 2.0%   |      |              |
| ΔV <sub>OUT</sub> /ΔV <sub>IN</sub>  | Line regulation                                               | 3.3V ≤ V <sub>IN</sub> ≤ 6.3VInternal reference voltage                                           | ΔV = 3V<br>I <sub>OUT</sub> = 150mA |         | 100  | 1300   | μV/V | 55.1, 55.2   |
| ΔV <sub>OUT</sub> /ΔI <sub>OUT</sub> | Load regulation                                               | 10mA ≤ I <sub>OUT</sub> ≤400mA<br>V <sub>IN</sub> = 5V, V <sub>OUT</sub> = -1.8V                  |                                     |         | 24   | 90     | mV/A | 55.3         |
| V <sub>REF</sub>                     | Internal reference voltage                                    |                                                                                                   |                                     | -0.610  | -0.6 | -0.593 | V    | 30.1-30.3    |

## 4 Applicable and Reference Documents

### 4.1 Applicable Documents

- Texas Instruments, [TPS7H130X-SP 3V to 6.3V Input, 400mA, -6V to -0.6V Radiation Hardened Switched Capacitor Voltage Inverter with Integrated Low Dropout Regulator](#), data sheet

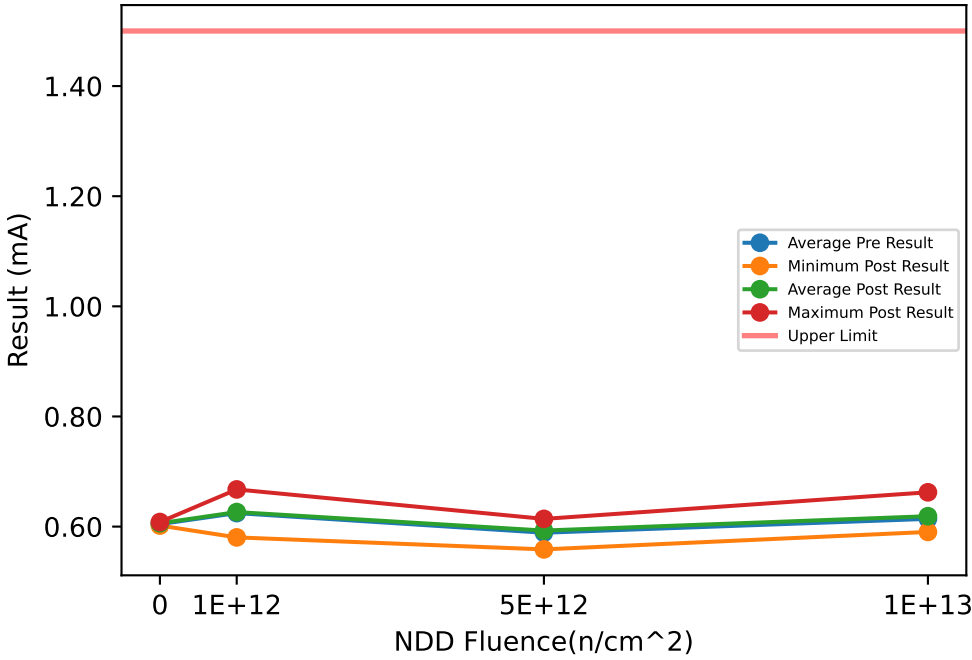
## 4.2 Reference Documents

Texas Instruments neutron irradiation test follow the guideline from MIL-STD-883 TM 1017. The document is available in Defense Logistic Agency's website.

## Appendix A: NDD Report Data

This appendix contains the NDD report data.

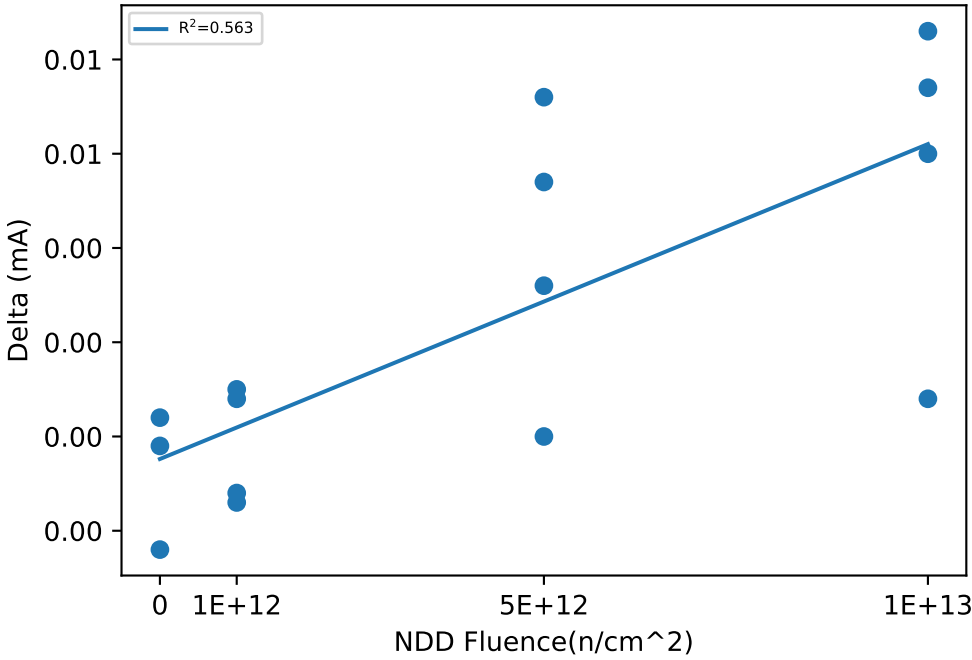
NDD vs Result Stats



Test Results (Upper Limit = 1.5 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 0.6011     | 0.6019      | 0.0008 |
| 2        | 0               | CU2                 | 0.6062     | 0.6081      | 0.0019 |
| 3        | 0               | CU3                 | 0.6061     | 0.6083      | 0.0022 |
| 60       | 1e+12           | 1E12n/cm2           | 0.6181     | 0.6195      | 0.0014 |
| 61       | 1e+12           | 1E12n/cm2           | 0.6358     | 0.6382      | 0.0024 |
| 62       | 1e+12           | 1E12n/cm2           | 0.5791     | 0.5804      | 0.0013 |
| 63       | 1e+12           | 1E12n/cm2           | 0.665      | 0.6675      | 0.0025 |
| 64       | 5e+12           | 5E12n/cm2           | 0.5812     | 0.5859      | 0.0047 |
| 65       | 5e+12           | 5E12n/cm2           | 0.6092     | 0.6128      | 0.0036 |
| 66       | 5e+12           | 5E12n/cm2           | 0.612      | 0.614       | 0.002  |
| 67       | 5e+12           | 5E12n/cm2           | 0.553      | 0.5586      | 0.0056 |
| 68       | 1e+13           | 1E13n/cm2           | 0.6566     | 0.6623      | 0.0057 |
| 69       | 1e+13           | 1E13n/cm2           | 0.612      | 0.6183      | 0.0063 |
| 70       | 1e+13           | 1E13n/cm2           | 0.5853     | 0.5903      | 0.005  |
| 71       | 1e+13           | 1E13n/cm2           | 0.6022     | 0.6046      | 0.0024 |

NDD vs Post - Pre Exposure Delta

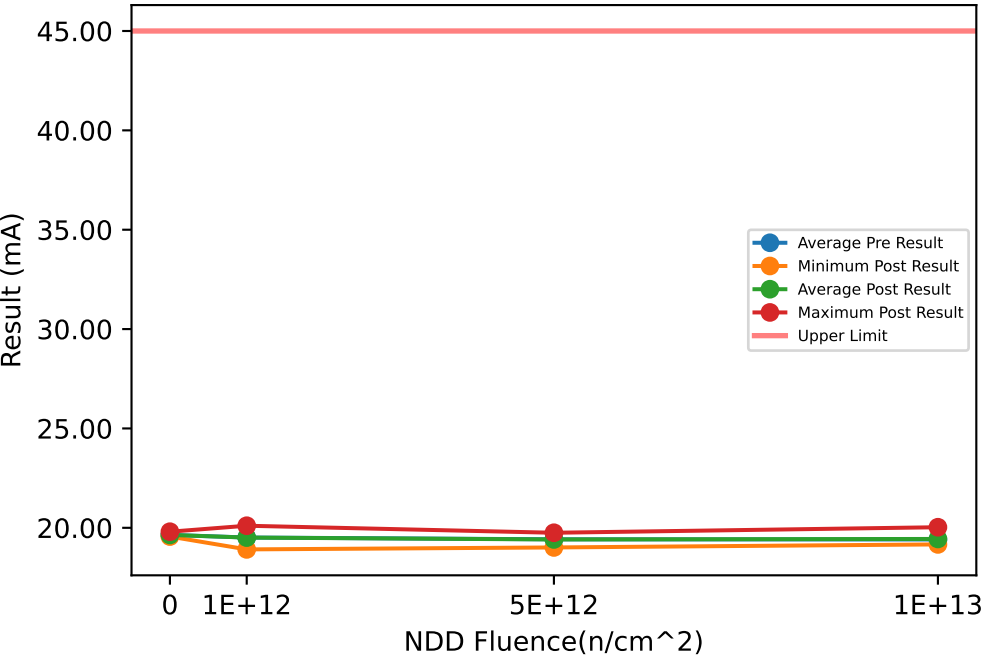


Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|------------|
| 0               | 0.6011           | 0.60447          | 0.6062           | 0.002916         | 0.6019            | 0.6061            | 0.6083            | 0.0036387         | 0.0008    | 0.0016333 | 0.0022    | 0.00073711 |
| 1e+12           | 0.5791           | 0.6245           | 0.665            | 0.035917         | 0.5804            | 0.6264            | 0.6675            | 0.036479          | 0.0013    | 0.0019    | 0.0025    | 0.0006377  |
| 5e+12           | 0.553            | 0.58885          | 0.612            | 0.027651         | 0.5586            | 0.59282           | 0.614             | 0.026247          | 0.002     | 0.003975  | 0.0056    | 0.00155    |
| 1e+13           | 0.5853           | 0.61403          | 0.6566           | 0.03045          | 0.5903            | 0.61887           | 0.6623            | 0.031125          | 0.0024    | 0.00485   | 0.0063    | 0.0017176  |

Device Test: 205.2 SUPPLY\_CURRENT|POST/VIN/QUIESCENT///3/@IQ\_VIN\_1302

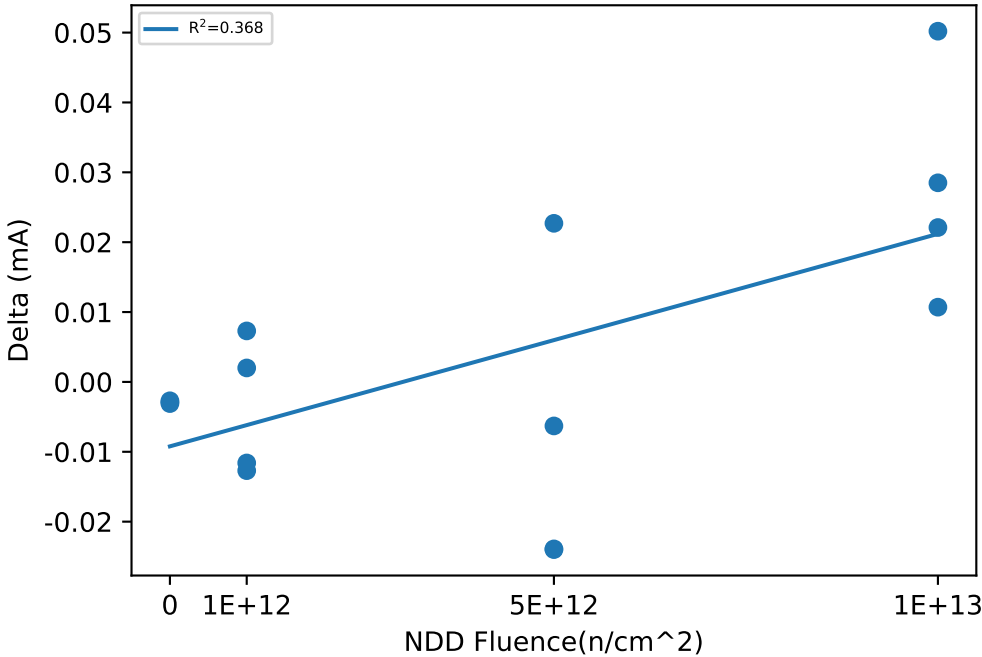
NDD vs Result Stats



Test Results (Upper Limit = 45.0 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 19.564     | 19.561      | -0.0029 |
| 2        | 0               | CU2                 | 19.806     | 19.803      | -0.0031 |
| 3        | 0               | CU3                 | 19.562     | 19.559      | -0.0027 |
| 60       | 1e+12           | 1E12n/cm2           | 18.906     | 18.913      | 0.0073  |
| 61       | 1e+12           | 1E12n/cm2           | 20.116     | 20.104      | -0.0116 |
| 62       | 1e+12           | 1E12n/cm2           | 19.299     | 19.301      | 0.002   |
| 63       | 1e+12           | 1E12n/cm2           | 19.724     | 19.712      | -0.0127 |
| 64       | 5e+12           | 5E12n/cm2           | 19.775     | 19.751      | -0.024  |
| 65       | 5e+12           | 5E12n/cm2           | 19.414     | 19.39       | -0.0239 |
| 66       | 5e+12           | 5E12n/cm2           | 19.017     | 19.011      | -0.0063 |
| 67       | 5e+12           | 5E12n/cm2           | 19.481     | 19.503      | 0.0227  |
| 68       | 1e+13           | 1E13n/cm2           | 19.162     | 19.212      | 0.0502  |
| 69       | 1e+13           | 1E13n/cm2           | 19.154     | 19.164      | 0.0107  |
| 70       | 1e+13           | 1E13n/cm2           | 20         | 20.029      | 0.0285  |
| 71       | 1e+13           | 1E13n/cm2           | 19.33      | 19.352      | 0.0221  |

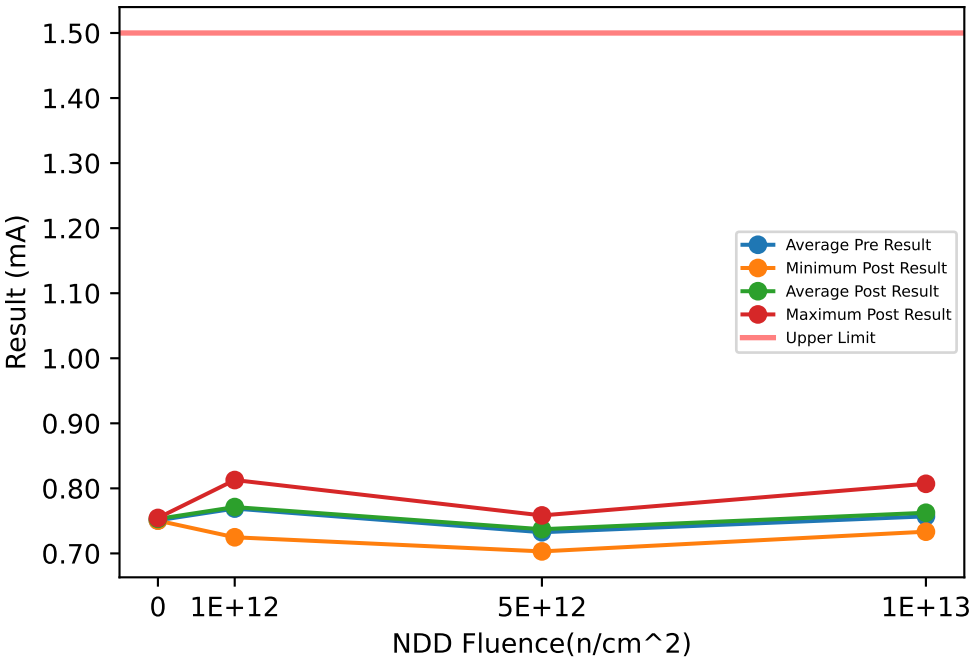
NDD vs Post - Pre Exposure Delta



Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 19.562           | 19.644           | 19.806           | 0.1405           | 19.559            | 19.641            | 19.803            | 0.14033           | -0.0031   | -0.0029   | -0.0027   | 0.0002    |
| 1e+12           | 18.906           | 19.511           | 20.116           | 0.52346          | 18.913            | 19.508            | 20.104            | 0.51421           | -0.0127   | -0.00375  | 0.0073    | 0.009948  |
| 5e+12           | 19.017           | 19.422           | 19.775           | 0.31173          | 19.011            | 19.414            | 19.751            | 0.30778           | -0.024    | -0.007875 | 0.0227    | 0.022016  |
| 1e+13           | 19.154           | 19.411           | 20               | 0.40087          | 19.164            | 19.439            | 20.029            | 0.40096           | 0.0107    | 0.027875  | 0.0502    | 0.016604  |

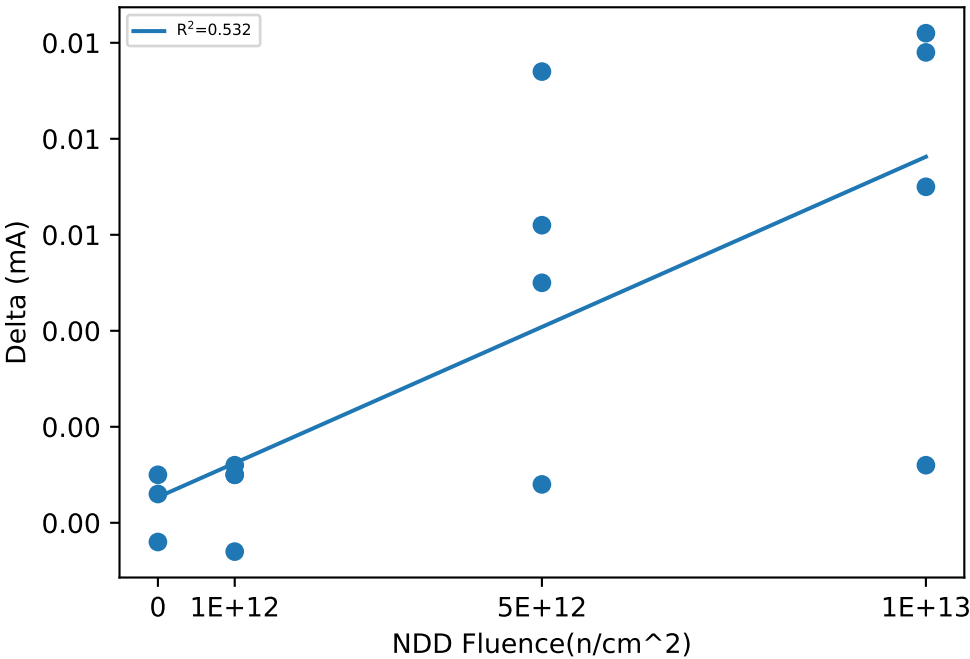
NDD vs Result Stats



Test Results (Upper Limit = 1.5 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 0.7486     | 0.7504      | 0.0018 |
| 2        | 0               | CU2                 | 0.7522     | 0.7545      | 0.0023 |
| 3        | 0               | CU3                 | 0.7517     | 0.7542      | 0.0025 |
| 60       | 1e+12           | 1E12n/cm2           | 0.7629     | 0.7646      | 0.0017 |
| 61       | 1e+12           | 1E12n/cm2           | 0.7803     | 0.7828      | 0.0025 |
| 62       | 1e+12           | 1E12n/cm2           | 0.7223     | 0.7248      | 0.0025 |
| 63       | 1e+12           | 1E12n/cm2           | 0.8102     | 0.8128      | 0.0026 |
| 64       | 5e+12           | 5E12n/cm2           | 0.7248     | 0.7299      | 0.0051 |
| 65       | 5e+12           | 5E12n/cm2           | 0.7529     | 0.7574      | 0.0045 |
| 66       | 5e+12           | 5E12n/cm2           | 0.756      | 0.7584      | 0.0024 |
| 67       | 5e+12           | 5E12n/cm2           | 0.6964     | 0.7031      | 0.0067 |
| 68       | 1e+13           | 1E13n/cm2           | 0.8001     | 0.807       | 0.0069 |
| 69       | 1e+13           | 1E13n/cm2           | 0.7551     | 0.7622      | 0.0071 |
| 70       | 1e+13           | 1E13n/cm2           | 0.7279     | 0.7334      | 0.0055 |
| 71       | 1e+13           | 1E13n/cm2           | 0.7448     | 0.7474      | 0.0026 |

NDD vs Post - Pre Exposure Delta

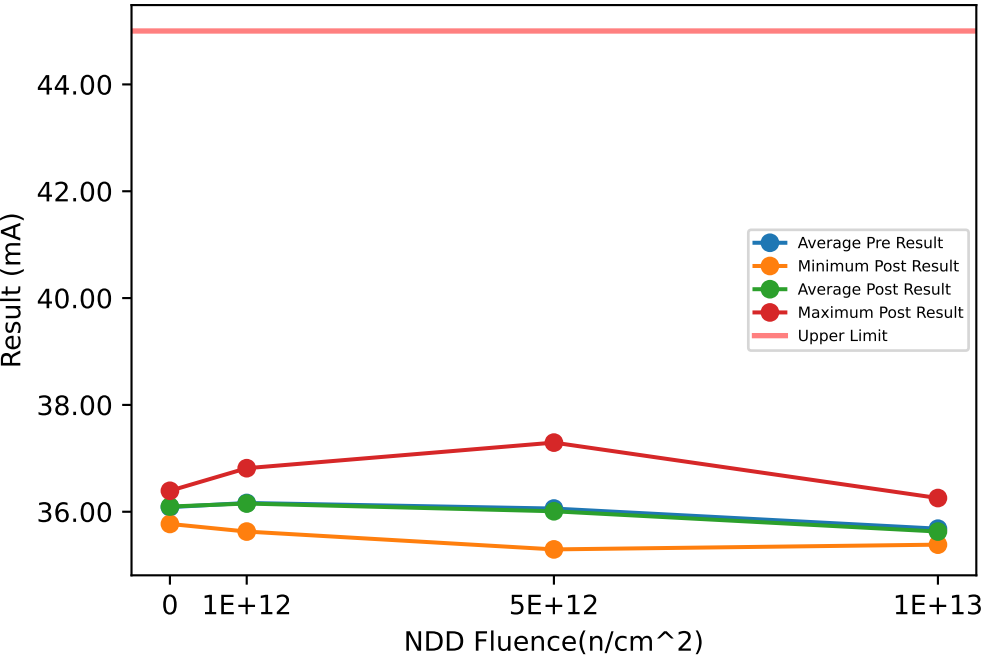


Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|------------|
| 0               | 0.7486           | 0.75083          | 0.7522           | 0.0019502        | 0.7504            | 0.75303           | 0.7545            | 0.0022855         | 0.0018    | 0.0022    | 0.0025    | 0.00036056 |
| 1e+12           | 0.7223           | 0.76892          | 0.8102           | 0.036712         | 0.7248            | 0.77125           | 0.8128            | 0.036795          | 0.0017    | 0.002325  | 0.0026    | 0.00041932 |
| 5e+12           | 0.6964           | 0.73252          | 0.756            | 0.027874         | 0.7031            | 0.7372            | 0.7584            | 0.026291          | 0.0024    | 0.004675  | 0.0067    | 0.0017783  |
| 1e+13           | 0.7279           | 0.75697          | 0.8001           | 0.030859         | 0.7334            | 0.7625            | 0.807             | 0.031912          | 0.0026    | 0.005525  | 0.0071    | 0.0020759  |

Device Test: 205.4 SUPPLY\_CURRENT|POST/VIN/QUIESCENT///6.3/@IQ\_VIN\_1302

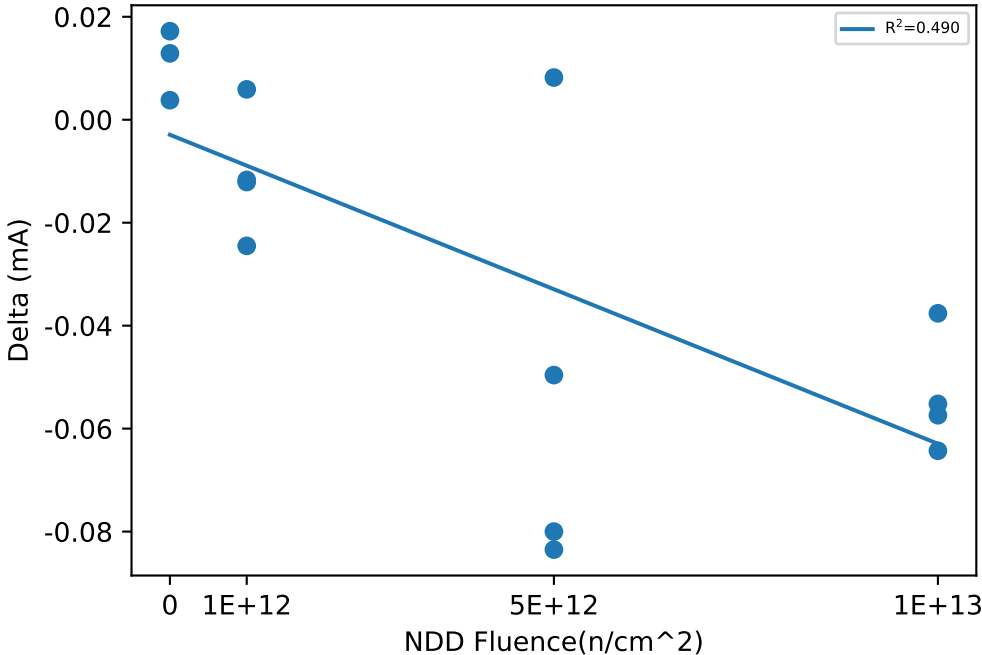
NDD vs Result Stats



Test Results (Upper Limit = 45.0 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 36.111     | 36.129      | 0.0172  |
| 2        | 0               | CU2                 | 36.388     | 36.392      | 0.0038  |
| 3        | 0               | CU3                 | 35.759     | 35.772      | 0.0129  |
| 60       | 1e+12           | 1E12n/cm2           | 35.641     | 35.629      | -0.0121 |
| 61       | 1e+12           | 1E12n/cm2           | 36.84      | 36.815      | -0.0245 |
| 62       | 1e+12           | 1E12n/cm2           | 35.779     | 35.784      | 0.0059  |
| 63       | 1e+12           | 1E12n/cm2           | 36.398     | 36.386      | -0.0117 |
| 64       | 5e+12           | 5E12n/cm2           | 37.374     | 37.294      | -0.08   |
| 65       | 5e+12           | 5E12n/cm2           | 35.79      | 35.707      | -0.0835 |
| 66       | 5e+12           | 5E12n/cm2           | 35.345     | 35.295      | -0.0496 |
| 67       | 5e+12           | 5E12n/cm2           | 35.731     | 35.74       | 0.0082  |
| 68       | 1e+13           | 1E13n/cm2           | 35.441     | 35.384      | -0.0574 |
| 69       | 1e+13           | 1E13n/cm2           | 35.51      | 35.455      | -0.0552 |
| 70       | 1e+13           | 1E13n/cm2           | 36.294     | 36.257      | -0.0376 |
| 71       | 1e+13           | 1E13n/cm2           | 35.486     | 35.422      | -0.0643 |

NDD vs Post - Pre Exposure Delta

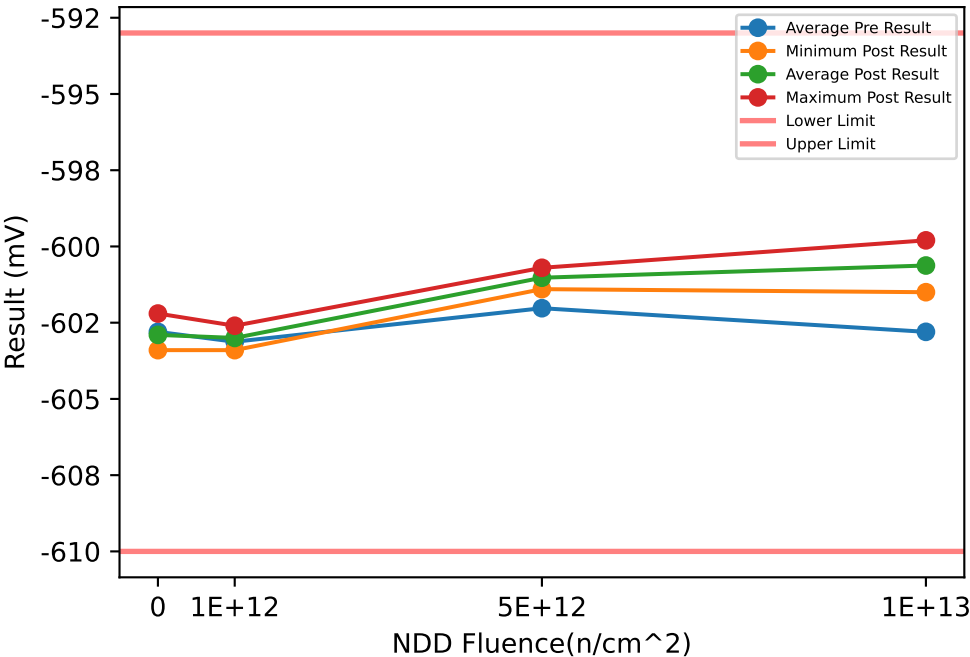


Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 35.759           | 36.086           | 36.388           | 0.31556          | 35.772            | 36.097            | 36.392            | 0.31142           | 0.0038    | 0.0113    | 0.0172    | 0.0068418 |
| 1e+12           | 35.641           | 36.164           | 36.84            | 0.55776          | 35.629            | 36.154            | 36.815            | 0.54873           | -0.0245   | -0.0106   | 0.0059    | 0.012502  |
| 5e+12           | 35.345           | 36.06            | 37.374           | 0.8982           | 35.295            | 36.009            | 37.294            | 0.88055           | -0.0835   | -0.051225 | 0.0082    | 0.042441  |
| 1e+13           | 35.441           | 35.683           | 36.294           | 0.40847          | 35.384            | 35.629            | 36.257            | 0.41916           | -0.0643   | -0.053625 | -0.0376   | 0.011365  |

Device Test: 30.1 VREF|/VREF//1N8V//3/@VREF

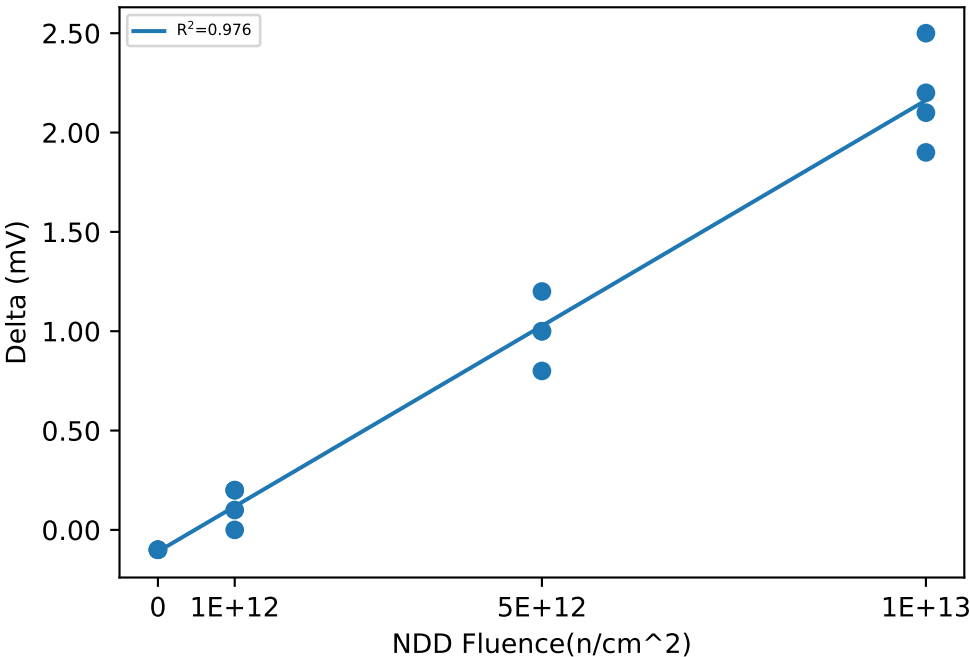
NDD vs Result Stats



Test Results (Lower Limit = -610.0, Upper Limit = -593.0 (mV))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta |
|----------|-----------------|---------------------|------------|-------------|-------|
| 1        | 0               | CU1                 | -603       | -603.1      | -0.1  |
| 2        | 0               | CU2                 | -602.1     | -602.2      | -0.1  |
| 3        | 0               | CU3                 | -603.3     | -603.4      | -0.1  |
| 60       | 1e+12           | 1E12n/cm2           | -603.6     | -603.4      | 0.2   |
| 61       | 1e+12           | 1E12n/cm2           | -603.1     | -603        | 0.1   |
| 62       | 1e+12           | 1E12n/cm2           | -603       | -603        | 0     |
| 63       | 1e+12           | 1E12n/cm2           | -602.8     | -602.6      | 0.2   |
| 64       | 5e+12           | 5E12n/cm2           | -601.6     | -600.8      | 0.8   |
| 65       | 5e+12           | 5E12n/cm2           | -602.4     | -601.4      | 1     |
| 66       | 5e+12           | 5E12n/cm2           | -602.2     | -601.2      | 1     |
| 67       | 5e+12           | 5E12n/cm2           | -601.9     | -600.7      | 1.2   |
| 68       | 1e+13           | 1E13n/cm2           | -602.5     | -600.6      | 1.9   |
| 69       | 1e+13           | 1E13n/cm2           | -604       | -601.5      | 2.5   |
| 70       | 1e+13           | 1E13n/cm2           | -602       | -599.8      | 2.2   |
| 71       | 1e+13           | 1E13n/cm2           | -602.7     | -600.6      | 2.1   |

NDD vs Post - Pre Exposure Delta

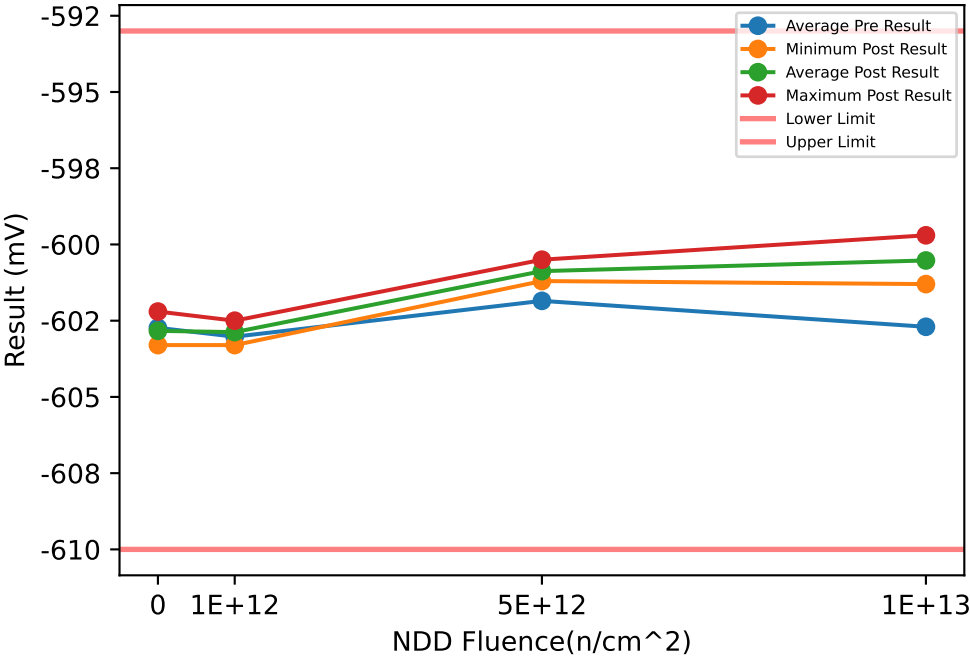


Test Statistics (mV)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|------------|
| 0               | -603.3           | -602.8           | -602.1           | 0.6245           | -603.4            | -602.9            | -602.2            | 0.6245            | -0.1      | -0.1      | -0.1      | 1.1369e-13 |
| 1e+12           | -603.6           | -603.12          | -602.8           | 0.34034          | -603.4            | -603              | -602.6            | 0.3266            | 0         | 0.125     | 0.2       | 0.095743   |
| 5e+12           | -602.4           | -602.02          | -601.6           | 0.35             | -601.4            | -601.02           | -600.7            | 0.3304            | 0.8       | 1         | 1.2       | 0.1633     |
| 1e+13           | -604             | -602.8           | -602             | 0.85245          | -601.5            | -600.62           | -599.8            | 0.69462           | 1.9       | 2.175     | 2.5       | 0.25       |

Device Test: 30.2 VREF|/VREF//1N8V//5/@VREF

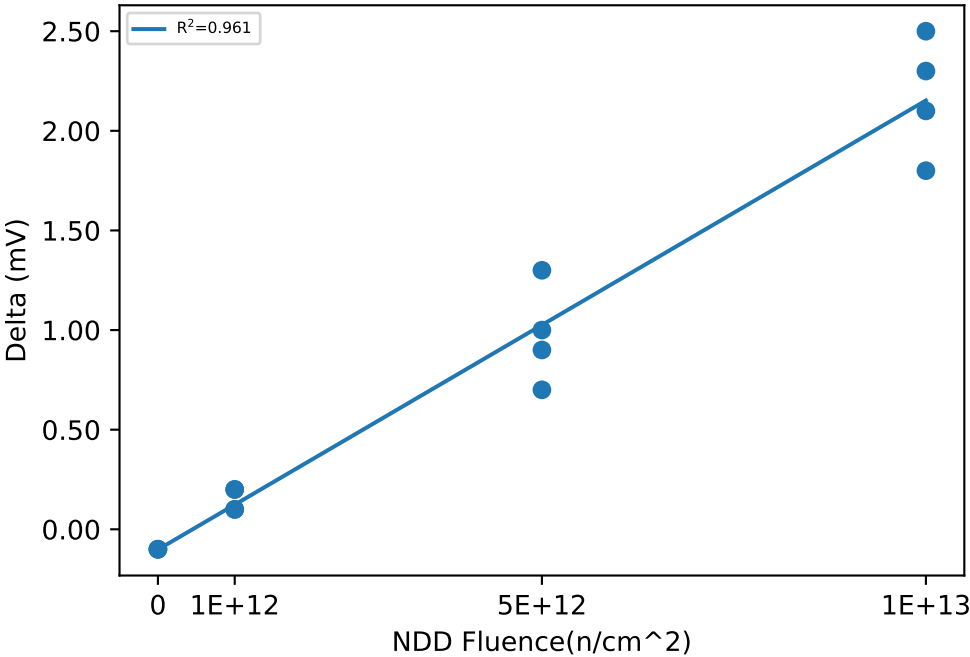
NDD vs Result Stats



Test Results (Lower Limit = -610.0, Upper Limit = -593.0 (mV))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta |
|----------|-----------------|---------------------|------------|-------------|-------|
| 1        | 0               | CU1                 | -602.9     | -603        | -0.1  |
| 2        | 0               | CU2                 | -602.1     | -602.2      | -0.1  |
| 3        | 0               | CU3                 | -603.2     | -603.3      | -0.1  |
| 60       | 1e+12           | 1E12n/cm2           | -603.5     | -603.3      | 0.2   |
| 61       | 1e+12           | 1E12n/cm2           | -603       | -602.9      | 0.1   |
| 62       | 1e+12           | 1E12n/cm2           | -602.9     | -602.8      | 0.1   |
| 63       | 1e+12           | 1E12n/cm2           | -602.7     | -602.5      | 0.2   |
| 64       | 5e+12           | 5E12n/cm2           | -601.5     | -600.8      | 0.7   |
| 65       | 5e+12           | 5E12n/cm2           | -602.2     | -601.2      | 1     |
| 66       | 5e+12           | 5E12n/cm2           | -601.9     | -601        | 0.9   |
| 67       | 5e+12           | 5E12n/cm2           | -601.8     | -600.5      | 1.3   |
| 68       | 1e+13           | 1E13n/cm2           | -602.4     | -600.6      | 1.8   |
| 69       | 1e+13           | 1E13n/cm2           | -603.8     | -601.3      | 2.5   |
| 70       | 1e+13           | 1E13n/cm2           | -602       | -599.7      | 2.3   |
| 71       | 1e+13           | 1E13n/cm2           | -602.6     | -600.5      | 2.1   |

NDD vs Post - Pre Exposure Delta

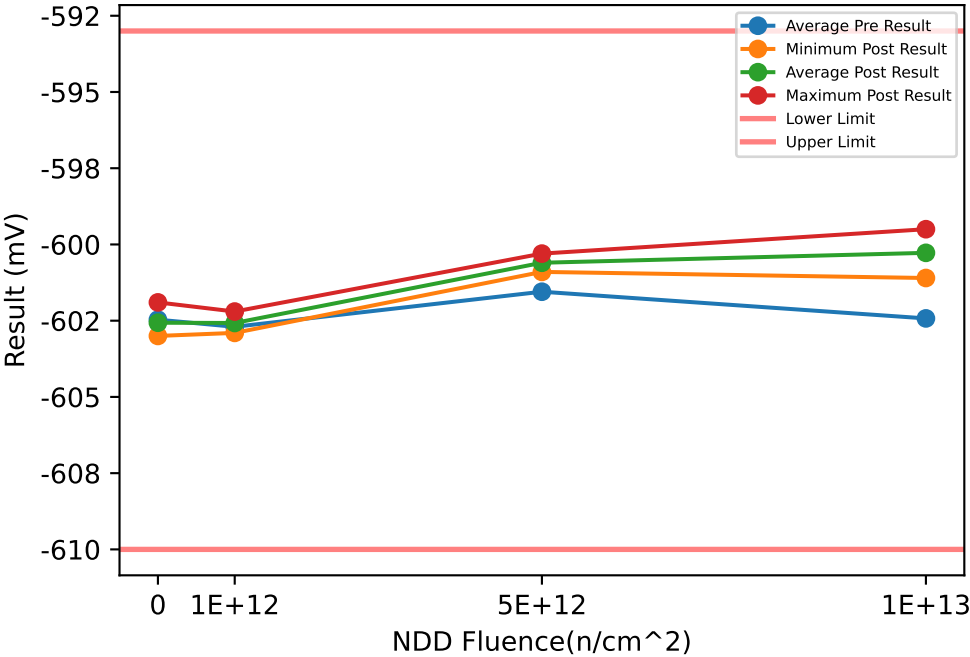


Test Statistics (mV)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|------------|
| 0               | -603.2           | -602.73          | -602.1           | 0.56862          | -603.3            | -602.83           | -602.2            | 0.56862           | -0.1      | -0.1      | -0.1      | 6.5638e-14 |
| 1e+12           | -603.5           | -603.02          | -602.7           | 0.34034          | -603.3            | -602.88           | -602.5            | 0.3304            | 0.1       | 0.15      | 0.2       | 0.057735   |
| 5e+12           | -602.2           | -601.85          | -601.5           | 0.28868          | -601.2            | -600.88           | -600.5            | 0.29861           | 0.7       | 0.975     | 1.3       | 0.25       |
| 1e+13           | -603.8           | -602.7           | -602             | 0.7746           | -601.3            | -600.52           | -599.7            | 0.65511           | 1.8       | 2.175     | 2.5       | 0.29861    |

Device Test: 30.3 VREF|/VREF//1N8V//6.3/@VREF

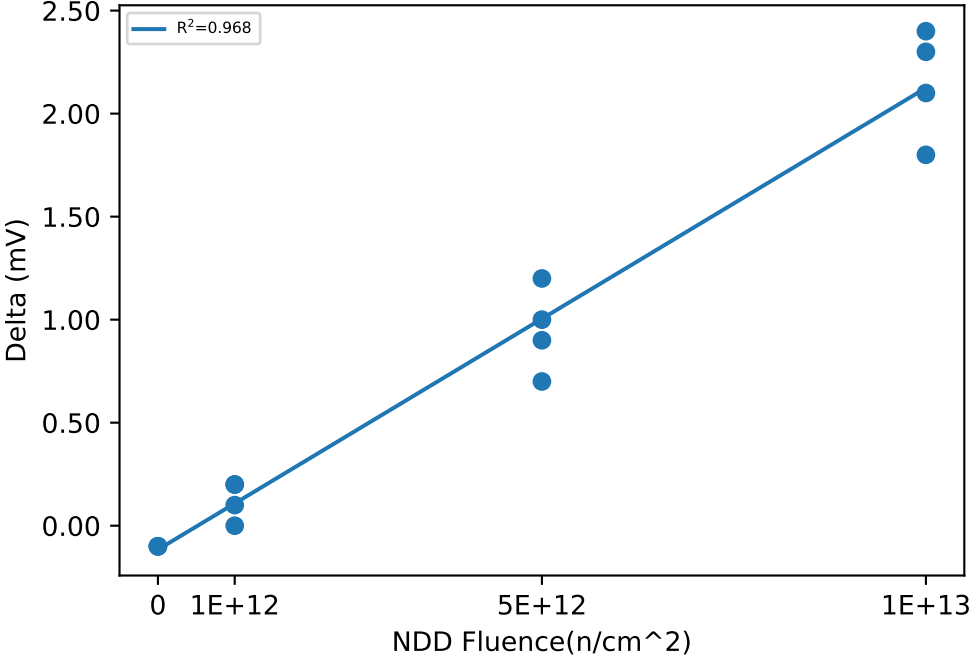
NDD vs Result Stats



Test Results (Lower Limit = -610.0, Upper Limit = -593.0 (mV))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta |
|----------|-----------------|---------------------|------------|-------------|-------|
| 1        | 0               | CU1                 | -602.7     | -602.8      | -0.1  |
| 2        | 0               | CU2                 | -601.8     | -601.9      | -0.1  |
| 3        | 0               | CU3                 | -602.9     | -603        | -0.1  |
| 60       | 1e+12           | 1E12n/cm2           | -603.1     | -602.9      | 0.2   |
| 61       | 1e+12           | 1E12n/cm2           | -602.7     | -602.6      | 0.1   |
| 62       | 1e+12           | 1E12n/cm2           | -602.6     | -602.6      | 0     |
| 63       | 1e+12           | 1E12n/cm2           | -602.4     | -602.2      | 0.2   |
| 64       | 5e+12           | 5E12n/cm2           | -601.2     | -600.5      | 0.7   |
| 65       | 5e+12           | 5E12n/cm2           | -601.9     | -600.9      | 1     |
| 66       | 5e+12           | 5E12n/cm2           | -601.6     | -600.7      | 0.9   |
| 67       | 5e+12           | 5E12n/cm2           | -601.5     | -600.3      | 1.2   |
| 68       | 1e+13           | 1E13n/cm2           | -602       | -600.2      | 1.8   |
| 69       | 1e+13           | 1E13n/cm2           | -603.5     | -601.1      | 2.4   |
| 70       | 1e+13           | 1E13n/cm2           | -601.8     | -599.5      | 2.3   |
| 71       | 1e+13           | 1E13n/cm2           | -602.4     | -600.3      | 2.1   |

NDD vs Post - Pre Exposure Delta

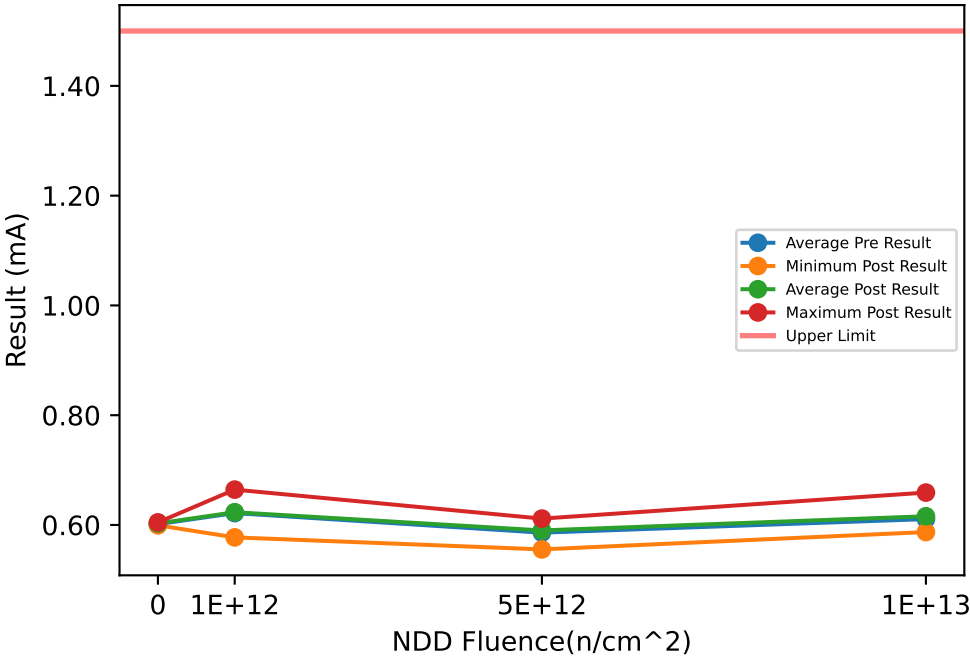


Test Statistics (mV)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|------------|
| 0               | -602.9           | -602.47          | -601.8           | 0.58595          | -603              | -602.57           | -601.9            | 0.58595           | -0.1      | -0.1      | -0.1      | 6.5638e-14 |
| 1e+12           | -603.1           | -602.7           | -602.4           | 0.29439          | -602.9            | -602.58           | -602.2            | 0.28723           | 0         | 0.125     | 0.2       | 0.095743   |
| 5e+12           | -601.9           | -601.55          | -601.2           | 0.28868          | -600.9            | -600.6            | -600.3            | 0.2582            | 0.7       | 0.95      | 1.2       | 0.20817    |
| 1e+13           | -603.5           | -602.42          | -601.8           | 0.75884          | -601.1            | -600.27           | -599.5            | 0.65511           | 1.8       | 2.15      | 2.4       | 0.26458    |

Device Test: 31.1 SUPPLY\_CURRENT|PRE/VIN/SHUTDOWN///3/@I\_SHDN

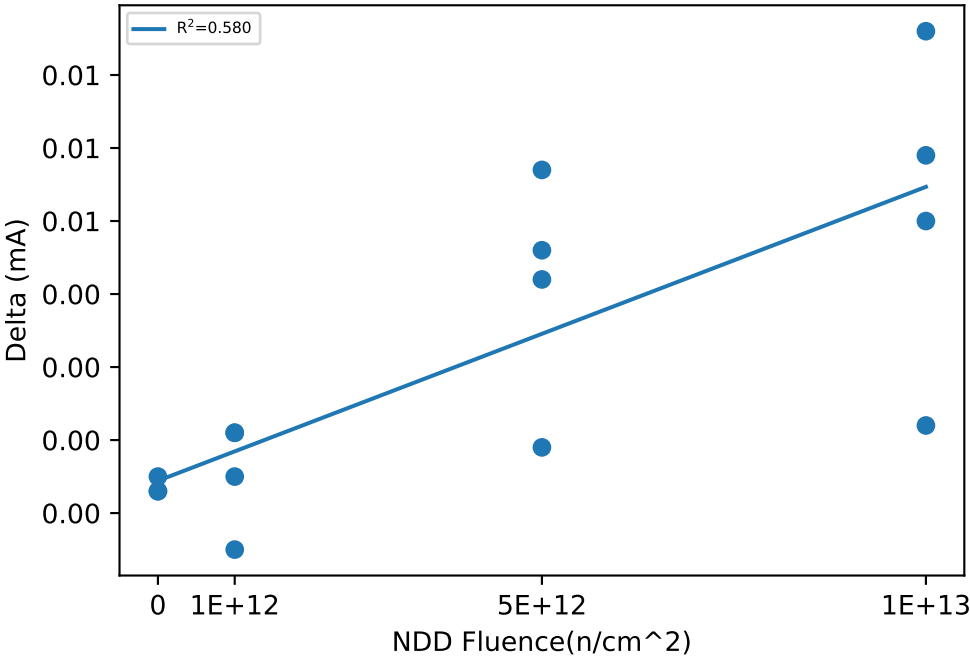
NDD vs Result Stats



Test Results (Upper Limit = 1.5 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 0.5981     | 0.5994      | 0.0013 |
| 2        | 0               | CU2                 | 0.6034     | 0.6047      | 0.0013 |
| 3        | 0               | CU3                 | 0.603      | 0.6045      | 0.0015 |
| 60       | 1e+12           | 1E12n/cm2           | 0.6152     | 0.6157      | 0.0005 |
| 61       | 1e+12           | 1E12n/cm2           | 0.6333     | 0.6354      | 0.0021 |
| 62       | 1e+12           | 1E12n/cm2           | 0.5753     | 0.5774      | 0.0021 |
| 63       | 1e+12           | 1E12n/cm2           | 0.6629     | 0.6644      | 0.0015 |
| 64       | 5e+12           | 5E12n/cm2           | 0.5787     | 0.5833      | 0.0046 |
| 65       | 5e+12           | 5E12n/cm2           | 0.6057     | 0.6099      | 0.0042 |
| 66       | 5e+12           | 5E12n/cm2           | 0.6097     | 0.6116      | 0.0019 |
| 67       | 5e+12           | 5E12n/cm2           | 0.5498     | 0.5555      | 0.0057 |
| 68       | 1e+13           | 1E13n/cm2           | 0.6531     | 0.659       | 0.0059 |
| 69       | 1e+13           | 1E13n/cm2           | 0.6087     | 0.6163      | 0.0076 |
| 70       | 1e+13           | 1E13n/cm2           | 0.5821     | 0.5871      | 0.005  |
| 71       | 1e+13           | 1E13n/cm2           | 0.5989     | 0.6011      | 0.0022 |

NDD vs Post - Pre Exposure Delta

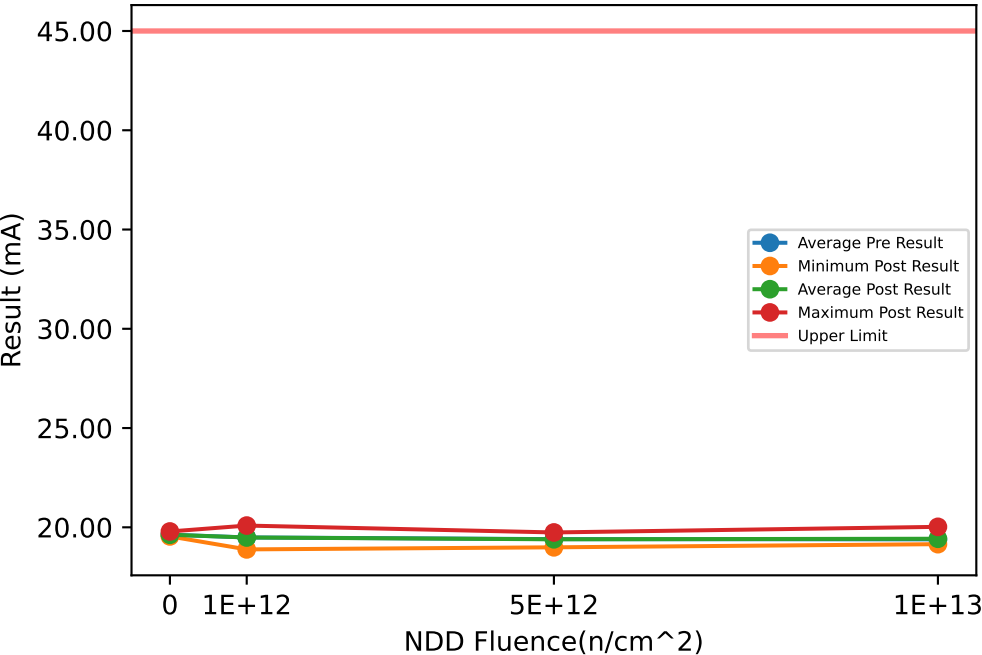


Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|------------|
| 0               | 0.5981           | 0.6015           | 0.6034           | 0.0029513        | 0.5994            | 0.60287           | 0.6047            | 0.0030039         | 0.0013    | 0.0013667 | 0.0015    | 0.00011547 |
| 1e+12           | 0.5753           | 0.62167          | 0.6629           | 0.036639         | 0.5774            | 0.62323           | 0.6644            | 0.036516          | 0.0005    | 0.00155   | 0.0021    | 0.00075498 |
| 5e+12           | 0.5498           | 0.58598          | 0.6097           | 0.02777          | 0.5555            | 0.59008           | 0.6116            | 0.026443          | 0.0019    | 0.0041    | 0.0057    | 0.0015979  |
| 1e+13           | 0.5821           | 0.6107           | 0.6531           | 0.030326         | 0.5871            | 0.61587           | 0.659             | 0.031125          | 0.0022    | 0.005175  | 0.0076    | 0.0022574  |

Device Test: 31.2 SUPPLY\_CURRENT|PRE/VIN/QUIESCENT///3/@IQ\_VIN\_1302

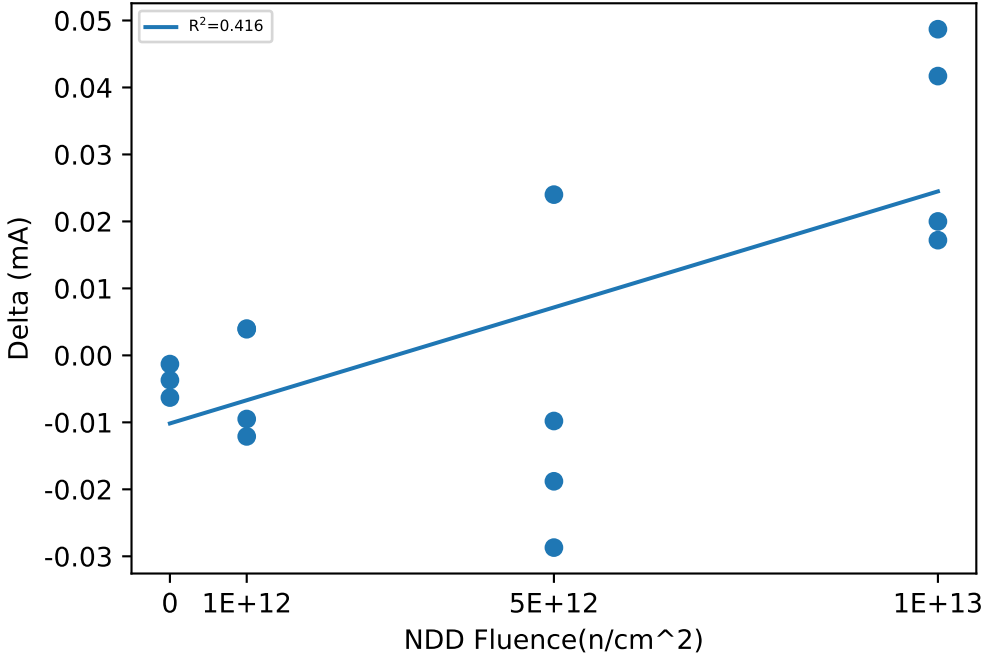
NDD vs Result Stats



Test Results (Upper Limit = 45.0 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 19.545     | 19.544      | -0.0013 |
| 2        | 0               | CU2                 | 19.797     | 19.79       | -0.0063 |
| 3        | 0               | CU3                 | 19.545     | 19.541      | -0.0037 |
| 60       | 1e+12           | 1E12n/cm2           | 18.884     | 18.888      | 0.004   |
| 61       | 1e+12           | 1E12n/cm2           | 20.1       | 20.088      | -0.0121 |
| 62       | 1e+12           | 1E12n/cm2           | 19.273     | 19.277      | 0.0039  |
| 63       | 1e+12           | 1E12n/cm2           | 19.704     | 19.695      | -0.0095 |
| 64       | 5e+12           | 5E12n/cm2           | 19.76      | 19.741      | -0.0188 |
| 65       | 5e+12           | 5E12n/cm2           | 19.393     | 19.364      | -0.0287 |
| 66       | 5e+12           | 5E12n/cm2           | 19.002     | 18.992      | -0.0098 |
| 67       | 5e+12           | 5E12n/cm2           | 19.464     | 19.488      | 0.024   |
| 68       | 1e+13           | 1E13n/cm2           | 19.142     | 19.191      | 0.0487  |
| 69       | 1e+13           | 1E13n/cm2           | 19.134     | 19.151      | 0.0172  |
| 70       | 1e+13           | 1E13n/cm2           | 19.982     | 20.023      | 0.0417  |
| 71       | 1e+13           | 1E13n/cm2           | 19.313     | 19.333      | 0.02    |

NDD vs Post - Pre Exposure Delta

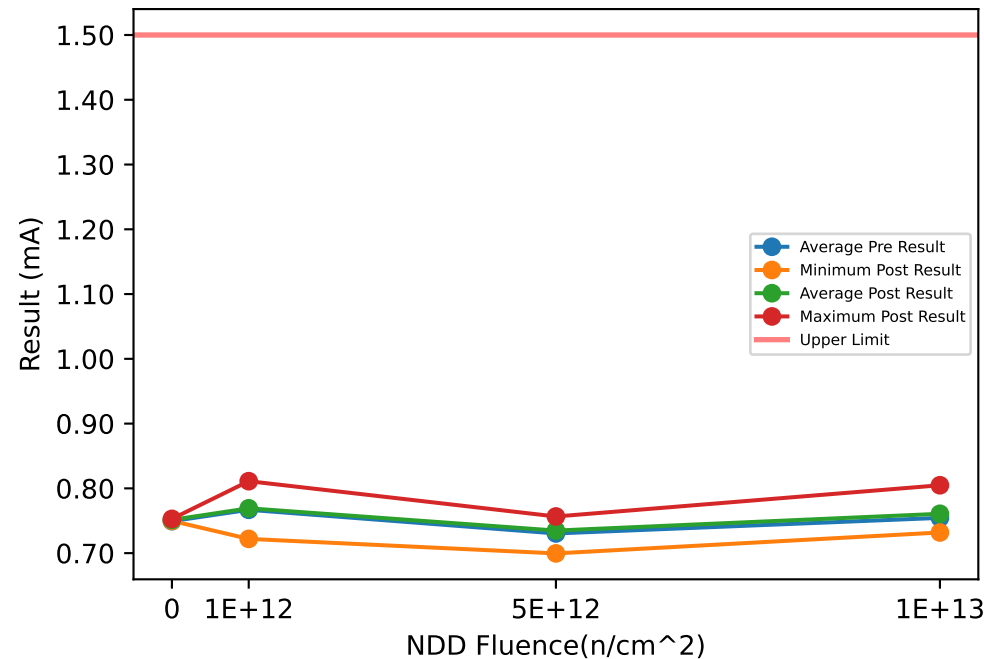


Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta  | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|------------|-----------|-----------|
| 0               | 19.545           | 19.629           | 19.797           | 0.1452           | 19.541            | 19.625            | 19.79             | 0.14301           | -0.0063   | -0.0037667 | -0.0013   | 0.0025007 |
| 1e+12           | 18.884           | 19.49            | 20.1             | 0.52683          | 18.888            | 19.487            | 20.088            | 0.51882           | -0.0121   | -0.003425  | 0.004     | 0.0085819 |
| 5e+12           | 19.002           | 19.405           | 19.76            | 0.31216          | 18.992            | 19.396            | 19.741            | 0.31195           | -0.0287   | -0.008325  | 0.024     | 0.022891  |
| 1e+13           | 19.134           | 19.393           | 19.982           | 0.40123          | 19.151            | 19.425            | 20.023            | 0.40675           | 0.0172    | 0.0319     | 0.0487    | 0.015663  |

Device Test: 31.3 SUPPLY\_CURRENT|PRE/VIN/SHUTDOWN///6.3/@I\_SHDN

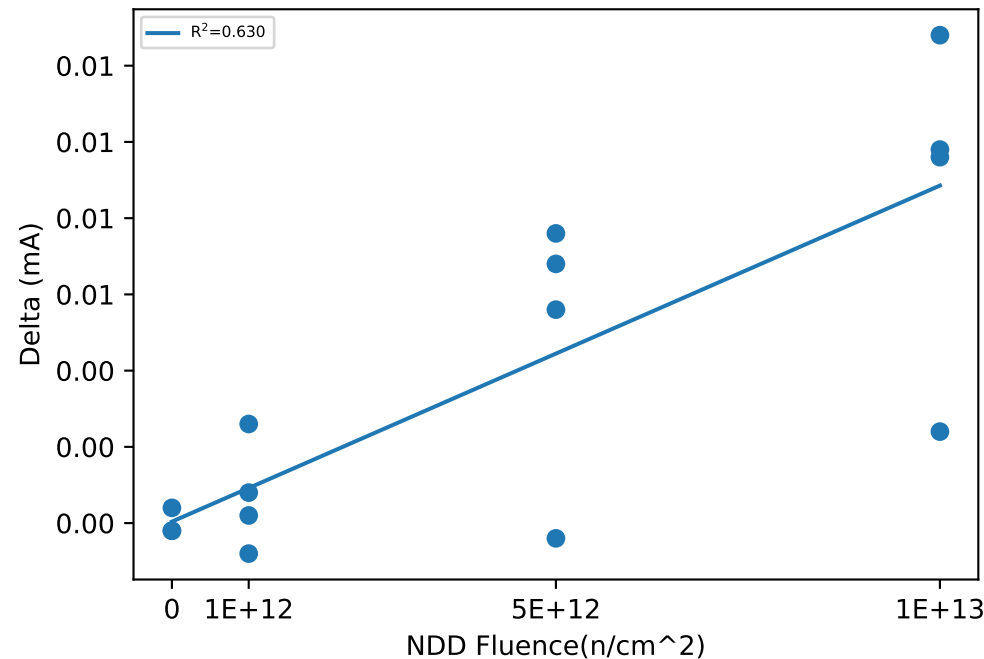
NDD vs Result Stats



Test Results (Upper Limit = 1.5 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 0.7476     | 0.7498      | 0.0022 |
| 2        | 0               | CU2                 | 0.751      | 0.7529      | 0.0019 |
| 3        | 0               | CU3                 | 0.7495     | 0.7514      | 0.0019 |
| 60       | 1e+12           | 1E12n/cm2           | 0.7614     | 0.763       | 0.0016 |
| 61       | 1e+12           | 1E12n/cm2           | 0.7785     | 0.7809      | 0.0024 |
| 62       | 1e+12           | 1E12n/cm2           | 0.7199     | 0.722       | 0.0021 |
| 63       | 1e+12           | 1E12n/cm2           | 0.8078     | 0.8111      | 0.0033 |
| 64       | 5e+12           | 5E12n/cm2           | 0.7235     | 0.7283      | 0.0048 |
| 65       | 5e+12           | 5E12n/cm2           | 0.7491     | 0.7549      | 0.0058 |
| 66       | 5e+12           | 5E12n/cm2           | 0.7548     | 0.7566      | 0.0018 |
| 67       | 5e+12           | 5E12n/cm2           | 0.6942     | 0.6996      | 0.0054 |
| 68       | 1e+13           | 1E13n/cm2           | 0.7979     | 0.8048      | 0.0069 |
| 69       | 1e+13           | 1E13n/cm2           | 0.7525     | 0.7609      | 0.0084 |
| 70       | 1e+13           | 1E13n/cm2           | 0.7251     | 0.7319      | 0.0068 |
| 71       | 1e+13           | 1E13n/cm2           | 0.7422     | 0.7454      | 0.0032 |

NDD vs Post - Pre Exposure Delta

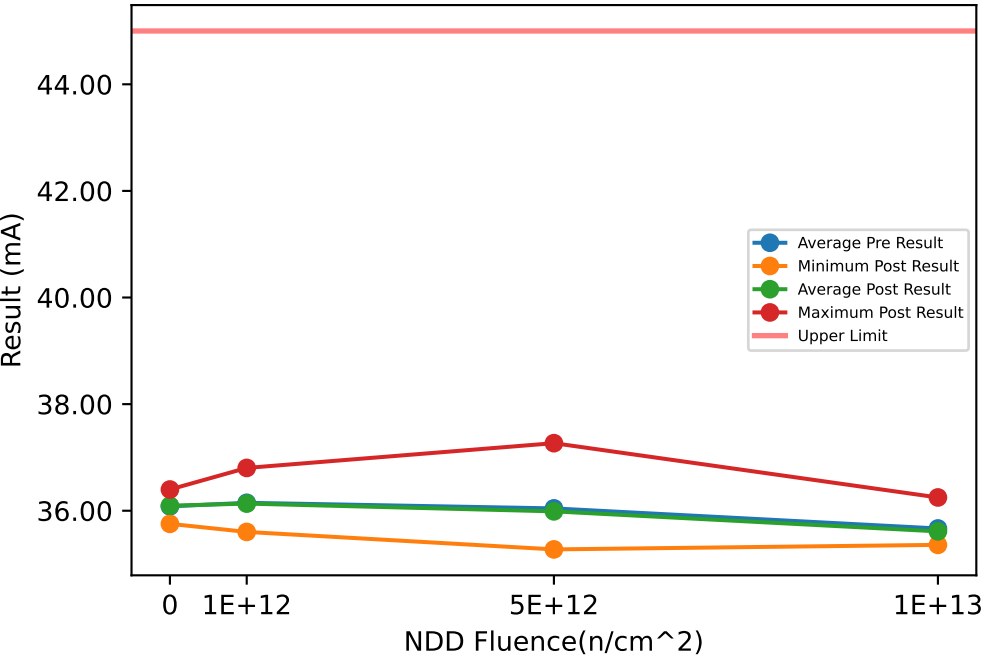


Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|------------|
| 0               | 0.7476           | 0.74937          | 0.751            | 0.0017039        | 0.7498            | 0.75137           | 0.7529            | 0.0015503         | 0.0019    | 0.002     | 0.0022    | 0.00017321 |
| 1e+12           | 0.7199           | 0.7669           | 0.8078           | 0.036727         | 0.722             | 0.76925           | 0.8111            | 0.037232          | 0.0016    | 0.00235   | 0.0033    | 0.00071414 |
| 5e+12           | 0.6942           | 0.7304           | 0.7548           | 0.027707         | 0.6996            | 0.73485           | 0.7566            | 0.026836          | 0.0018    | 0.00445   | 0.0058    | 0.0018138  |
| 1e+13           | 0.7251           | 0.75443          | 0.7979           | 0.031108         | 0.7319            | 0.76075           | 0.8048            | 0.031667          | 0.0032    | 0.006325  | 0.0084    | 0.0022081  |

Device Test: 31.4 SUPPLY\_CURRENT|PRE/VIN/QUIESCENT///6.3/@IQ\_VIN\_1302

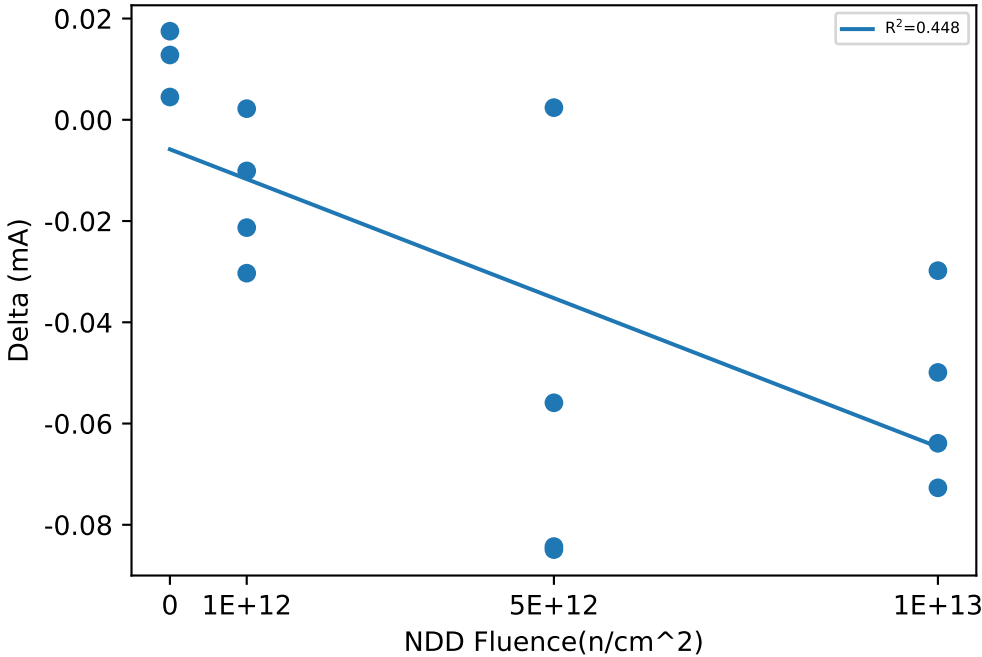
NDD vs Result Stats



Test Results (Upper Limit = 45.0 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 36.112     | 36.129      | 0.0175  |
| 2        | 0               | CU2                 | 36.394     | 36.398      | 0.0045  |
| 3        | 0               | CU3                 | 35.741     | 35.754      | 0.0128  |
| 60       | 1e+12           | 1E12n/cm2           | 35.624     | 35.602      | -0.0213 |
| 61       | 1e+12           | 1E12n/cm2           | 36.833     | 36.803      | -0.0303 |
| 62       | 1e+12           | 1E12n/cm2           | 35.758     | 35.76       | 0.0022  |
| 63       | 1e+12           | 1E12n/cm2           | 36.38      | 36.369      | -0.0101 |
| 64       | 5e+12           | 5E12n/cm2           | 37.352     | 37.267      | -0.0849 |
| 65       | 5e+12           | 5E12n/cm2           | 35.774     | 35.69       | -0.0843 |
| 66       | 5e+12           | 5E12n/cm2           | 35.331     | 35.275      | -0.0559 |
| 67       | 5e+12           | 5E12n/cm2           | 35.719     | 35.721      | 0.0024  |
| 68       | 1e+13           | 1E13n/cm2           | 35.423     | 35.36       | -0.0639 |
| 69       | 1e+13           | 1E13n/cm2           | 35.493     | 35.443      | -0.0499 |
| 70       | 1e+13           | 1E13n/cm2           | 36.279     | 36.249      | -0.0298 |
| 71       | 1e+13           | 1E13n/cm2           | 35.473     | 35.4        | -0.0727 |

NDD vs Post - Pre Exposure Delta

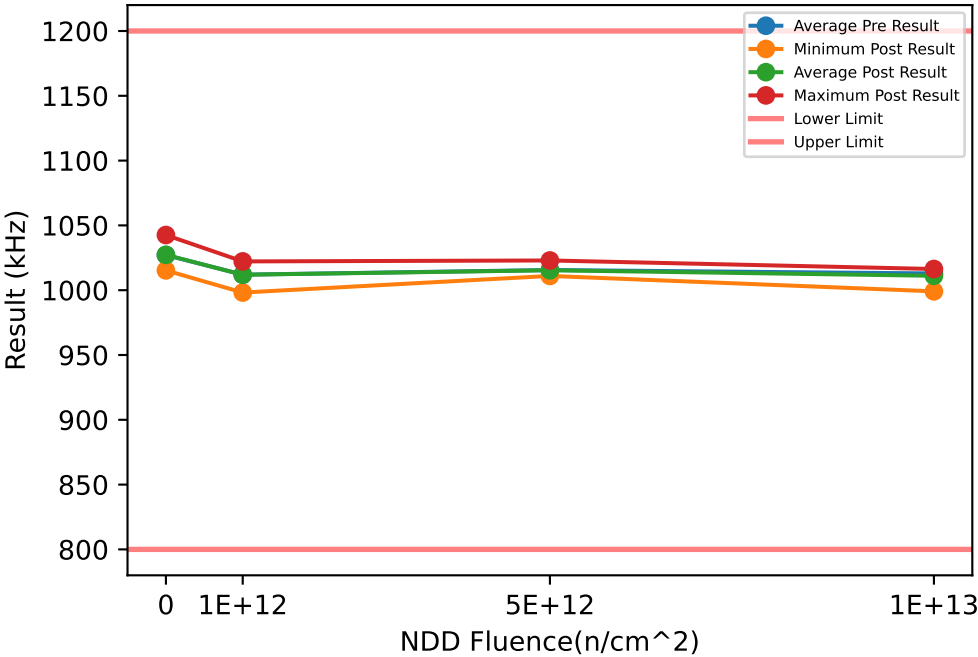


Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 35.741           | 36.082           | 36.394           | 0.3272           | 35.754            | 36.094            | 36.398            | 0.32351           | 0.0045    | 0.0116    | 0.0175    | 0.0065826 |
| 1e+12           | 35.624           | 36.149           | 36.833           | 0.56276          | 35.602            | 36.134            | 36.803            | 0.55533           | -0.0303   | -0.014875 | 0.0022    | 0.014066  |
| 5e+12           | 35.331           | 36.044           | 37.352           | 0.89427          | 35.275            | 35.988            | 37.267            | 0.87669           | -0.0849   | -0.055675 | 0.0024    | 0.041013  |
| 1e+13           | 35.423           | 35.667           | 36.279           | 0.40889          | 35.36             | 35.613            | 36.249            | 0.4254            | -0.0727   | -0.054075 | -0.0298   | 0.018709  |

Device Test: 35.1 SWITCHING\_FREQ|/CFLYP///0mA/3/@F\_SW\_1302

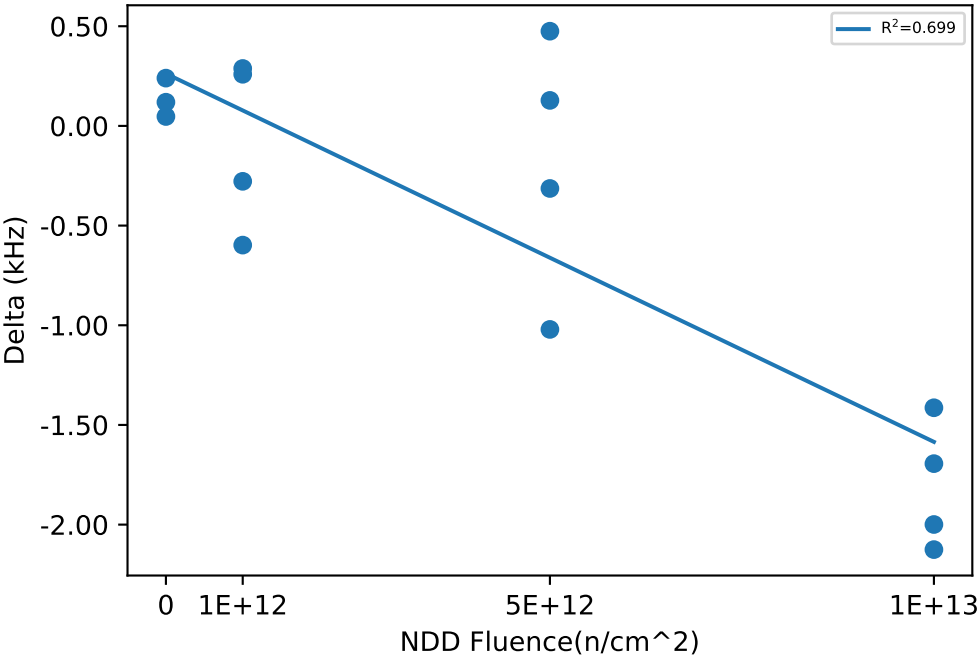
NDD vs Result Stats



Test Results (Lower Limit = 800.0, Upper Limit = 1200.0 (kHz))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 1042.3     | 1042.6      | 0.2397  |
| 2        | 0               | CU2                 | 1023.8     | 1023.9      | 0.1189  |
| 3        | 0               | CU3                 | 1015.2     | 1015.3      | 0.0472  |
| 60       | 1e+12           | 1E12n/cm2           | 1022.8     | 1022.2      | -0.5979 |
| 61       | 1e+12           | 1E12n/cm2           | 1012.3     | 1012.6      | 0.2881  |
| 62       | 1e+12           | 1E12n/cm2           | 997.92     | 998.18      | 0.259   |
| 63       | 1e+12           | 1E12n/cm2           | 1014.9     | 1014.6      | -0.278  |
| 64       | 5e+12           | 5E12n/cm2           | 1023.3     | 1022.9      | -0.3138 |
| 65       | 5e+12           | 5E12n/cm2           | 1012.6     | 1012.7      | 0.128   |
| 66       | 5e+12           | 5E12n/cm2           | 1012       | 1011        | -1.0208 |
| 67       | 5e+12           | 5E12n/cm2           | 1014.4     | 1014.9      | 0.4751  |
| 68       | 1e+13           | 1E13n/cm2           | 1015.8     | 1013.8      | -1.9994 |
| 69       | 1e+13           | 1E13n/cm2           | 1000.8     | 999.12      | -1.6941 |
| 70       | 1e+13           | 1E13n/cm2           | 1016.6     | 1015.2      | -1.4138 |
| 71       | 1e+13           | 1E13n/cm2           | 1018.5     | 1016.4      | -2.1253 |

NDD vs Post - Pre Exposure Delta

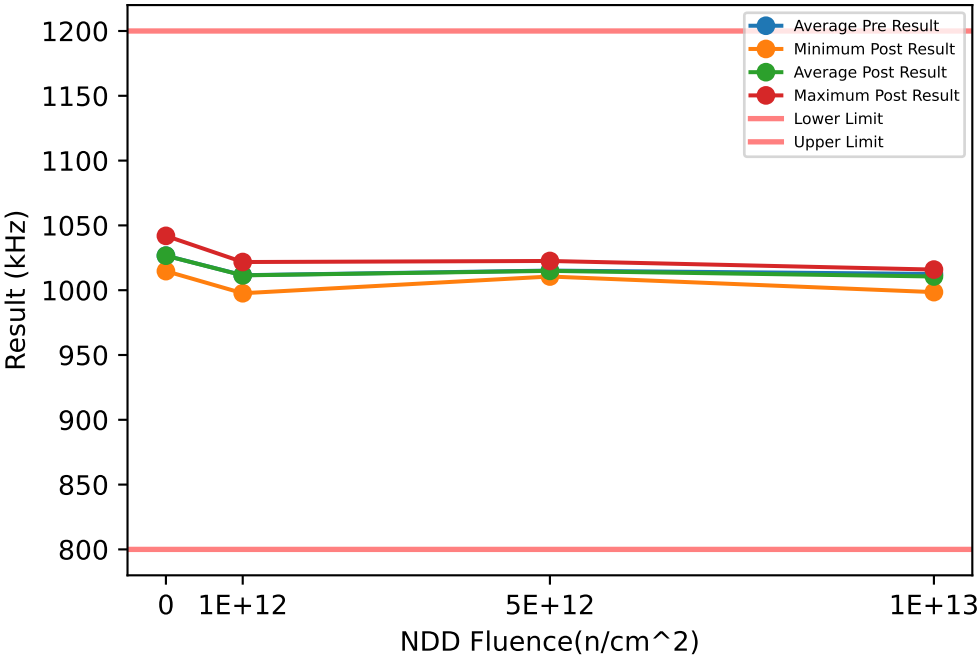


Test Statistics (kHz)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 1015.2           | 1027.1           | 1042.3           | 13.845           | 1015.3            | 1027.3            | 1042.6            | 13.942            | 0.0472    | 0.13527   | 0.2397    | 0.097288  |
| 1e+12           | 997.92           | 1012             | 1022.8           | 10.383           | 998.18            | 1011.9            | 1022.2            | 10.039            | -0.5979   | -0.0822   | 0.2881    | 0.43121   |
| 5e+12           | 1012             | 1015.6           | 1023.3           | 5.2282           | 1011              | 1015.4            | 1022.9            | 5.2855            | -1.0208   | -0.18287  | 0.4751    | 0.6452    |
| 1e+13           | 1000.8           | 1012.9           | 1018.5           | 8.1538           | 999.12            | 1011.1            | 1016.4            | 8.0677            | -2.1253   | -1.8082   | -1.4138   | 0.31921   |

Device Test: 35.2 SWITCHING\_FREQ|/CFLYP///10mA/3/@F\_SW\_1302

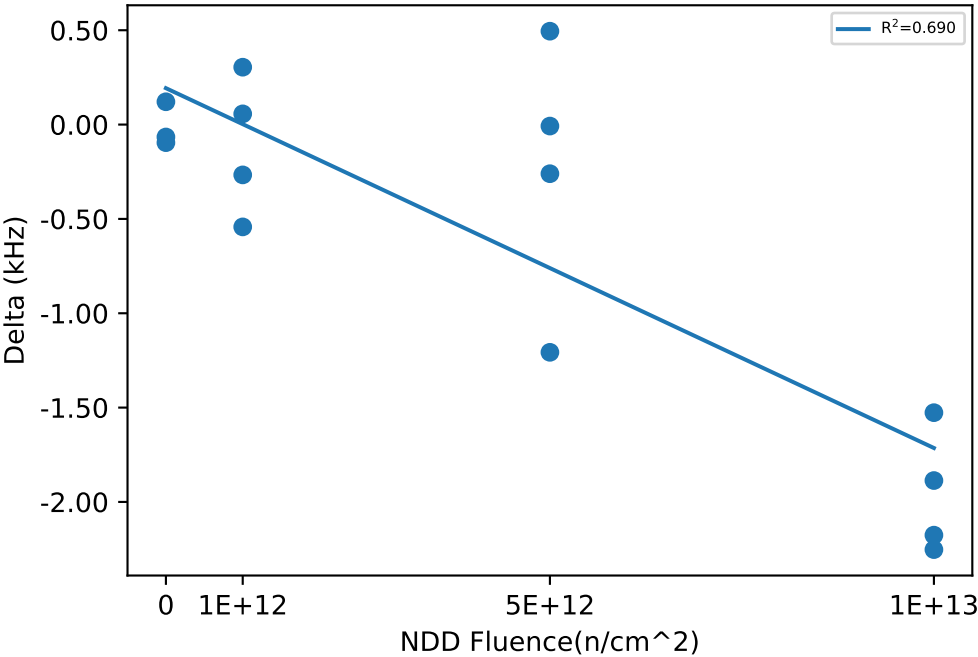
NDD vs Result Stats



Test Results (Lower Limit = 800.0, Upper Limit = 1200.0 (kHz))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 1042       | 1041.9      | -0.0958 |
| 2        | 0               | CU2                 | 1023.3     | 1023.3      | -0.0658 |
| 3        | 0               | CU3                 | 1014.6     | 1014.7      | 0.1209  |
| 60       | 1e+12           | 1E12n/cm2           | 1022.3     | 1021.7      | -0.5423 |
| 61       | 1e+12           | 1E12n/cm2           | 1012       | 1012.3      | 0.3041  |
| 62       | 1e+12           | 1E12n/cm2           | 997.59     | 997.65      | 0.0568  |
| 63       | 1e+12           | 1E12n/cm2           | 1014.4     | 1014.1      | -0.2667 |
| 64       | 5e+12           | 5E12n/cm2           | 1022.8     | 1022.5      | -0.2604 |
| 65       | 5e+12           | 5E12n/cm2           | 1012.2     | 1012.2      | -0.0079 |
| 66       | 5e+12           | 5E12n/cm2           | 1011.8     | 1010.6      | -1.207  |
| 67       | 5e+12           | 5E12n/cm2           | 1013.8     | 1014.3      | 0.4949  |
| 68       | 1e+13           | 1E13n/cm2           | 1015.4     | 1013.2      | -2.2526 |
| 69       | 1e+13           | 1E13n/cm2           | 1000.4     | 998.51      | -1.8866 |
| 70       | 1e+13           | 1E13n/cm2           | 1016.2     | 1014.7      | -1.5269 |
| 71       | 1e+13           | 1E13n/cm2           | 1018.1     | 1015.9      | -2.176  |

NDD vs Post - Pre Exposure Delta

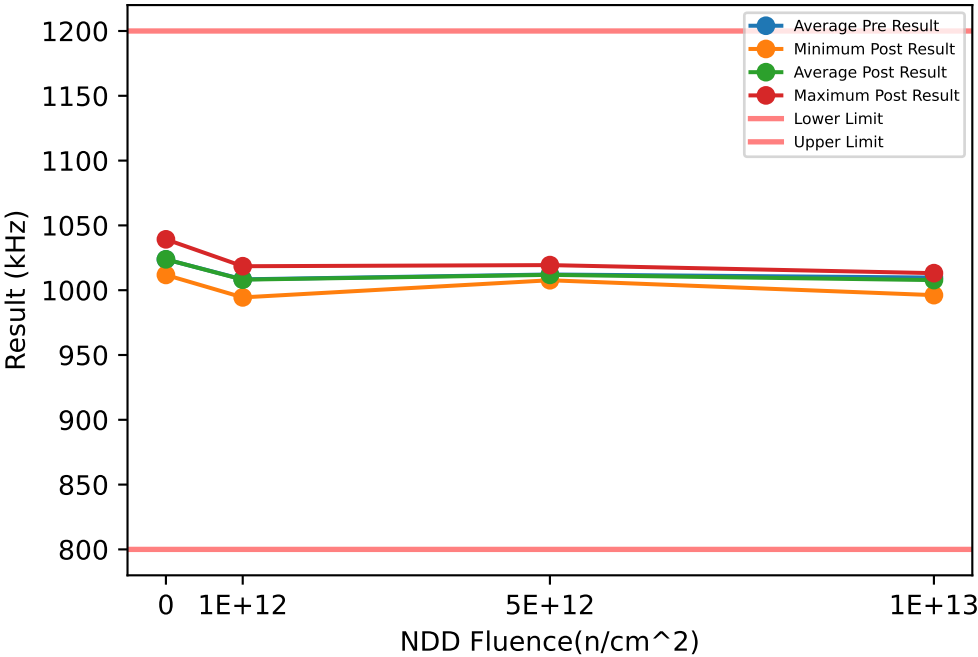


Test Statistics (kHz)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 1014.6           | 1026.6           | 1042             | 14.009           | 1014.7            | 1026.6            | 1041.9            | 13.913            | -0.0958   | -0.013567 | 0.1209    | 0.11741   |
| 1e+12           | 997.59           | 1011.6           | 1022.3           | 10.3             | 997.65            | 1011.4            | 1021.7            | 10.07             | -0.5423   | -0.11202  | 0.3041    | 0.37001   |
| 5e+12           | 1011.8           | 1015.1           | 1022.8           | 5.1845           | 1010.6            | 1014.9            | 1022.5            | 5.3251            | -1.207    | -0.2451   | 0.4949    | 0.71399   |
| 1e+13           | 1000.4           | 1012.5           | 1018.1           | 8.1643           | 998.51            | 1010.6            | 1015.9            | 8.1155            | -2.2526   | -1.9605   | -1.5269   | 0.32926   |

Device Test: 35.3 SWITCHING\_FREQ|/CFLYP///150mA/3/@F\_SW\_1302

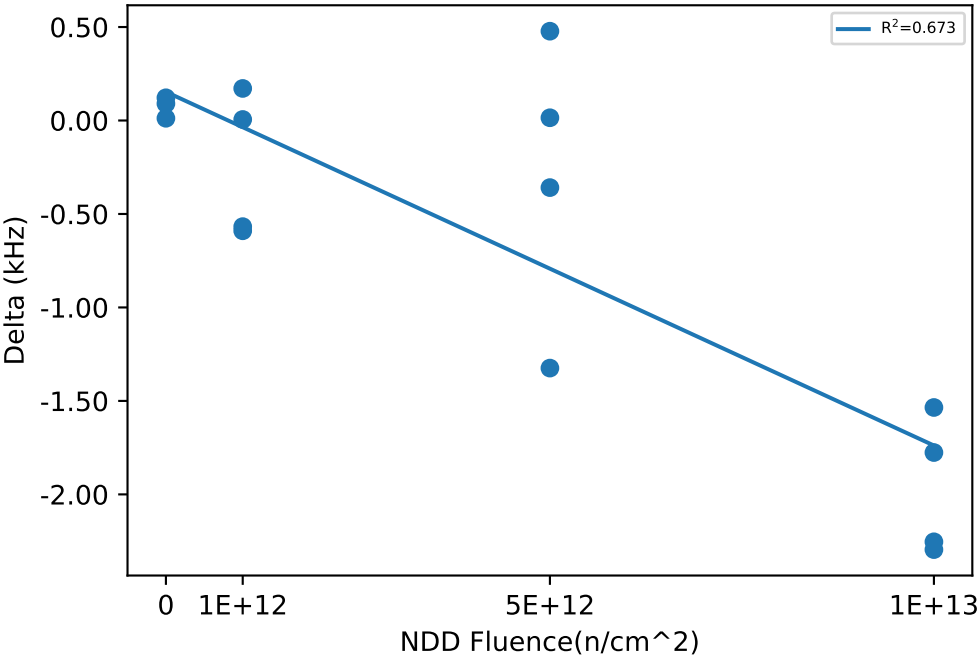
NDD vs Result Stats



Test Results (Lower Limit = 800.0, Upper Limit = 1200.0 (kHz))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 1039.2     | 1039.3      | 0.0904  |
| 2        | 0               | CU2                 | 1020.3     | 1020.4      | 0.1215  |
| 3        | 0               | CU3                 | 1011.8     | 1011.8      | 0.0119  |
| 60       | 1e+12           | 1E12n/cm2           | 1019.1     | 1018.5      | -0.5677 |
| 61       | 1e+12           | 1E12n/cm2           | 1008.7     | 1008.8      | 0.1715  |
| 62       | 1e+12           | 1E12n/cm2           | 994.44     | 994.44      | 0.0055  |
| 63       | 1e+12           | 1E12n/cm2           | 1011.3     | 1010.8      | -0.5899 |
| 64       | 5e+12           | 5E12n/cm2           | 1019.7     | 1019.4      | -0.3589 |
| 65       | 5e+12           | 5E12n/cm2           | 1009.2     | 1009.2      | 0.0147  |
| 66       | 5e+12           | 5E12n/cm2           | 1009       | 1007.7      | -1.3244 |
| 67       | 5e+12           | 5E12n/cm2           | 1010.6     | 1011.1      | 0.4777  |
| 68       | 1e+13           | 1E13n/cm2           | 1012.4     | 1010.1      | -2.2953 |
| 69       | 1e+13           | 1E13n/cm2           | 997.97     | 996.19      | -1.7761 |
| 70       | 1e+13           | 1E13n/cm2           | 1013.2     | 1011.7      | -1.5351 |
| 71       | 1e+13           | 1E13n/cm2           | 1015.4     | 1013.2      | -2.2536 |

NDD vs Post - Pre Exposure Delta

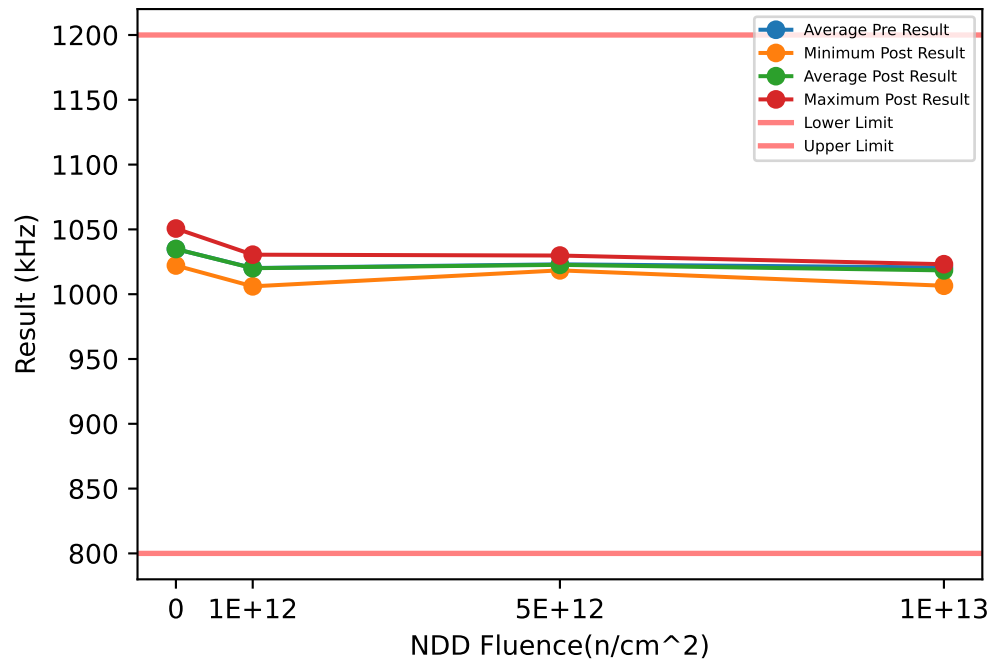


Test Statistics (kHz)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 1011.8           | 1023.7           | 1039.2           | 14.016           | 1011.8            | 1023.8            | 1039.3            | 14.046            | 0.0119    | 0.0746    | 0.1215    | 0.056482  |
| 1e+12           | 994.44           | 1008.4           | 1019.1           | 10.288           | 994.44            | 1008.1            | 1018.5            | 10.038            | -0.5899   | -0.24515  | 0.1715    | 0.39129   |
| 5e+12           | 1009             | 1012.1           | 1019.7           | 5.1109           | 1007.7            | 1011.8            | 1019.4            | 5.2095            | -1.3244   | -0.29773  | 0.4777    | 0.76522   |
| 1e+13           | 997.97           | 1009.8           | 1015.4           | 7.9584           | 996.19            | 1007.8            | 1013.2            | 7.8307            | -2.2953   | -1.965    | -1.5351   | 0.37098   |

Device Test: 35.4 SWITCHING\_FREQ|/CFLYP|///0mA/6.3/@F\_SW\_1302

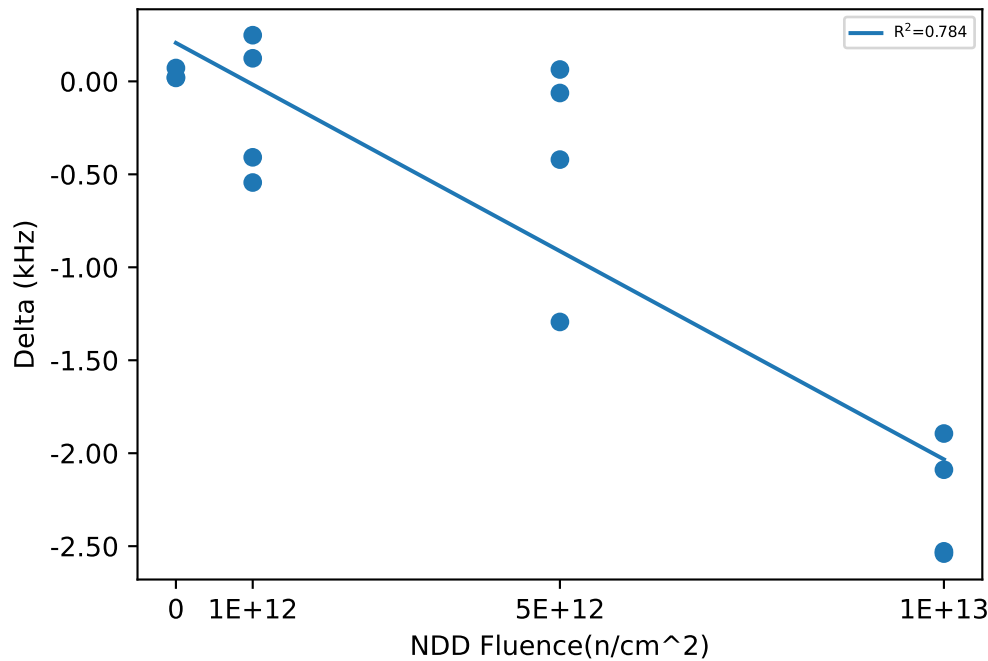
NDD vs Result Stats



Test Results (Lower Limit = 800.0, Upper Limit = 1200.0 (kHz))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 1050.7     | 1050.7      | 0.0186  |
| 2        | 0               | CU2                 | 1031.7     | 1031.8      | 0.0718  |
| 3        | 0               | CU3                 | 1022.1     | 1022.1      | 0.0215  |
| 60       | 1e+12           | 1E12n/cm2           | 1031       | 1030.5      | -0.5441 |
| 61       | 1e+12           | 1E12n/cm2           | 1021.1     | 1021.4      | 0.2483  |
| 62       | 1e+12           | 1E12n/cm2           | 1005.9     | 1006.1      | 0.1241  |
| 63       | 1e+12           | 1E12n/cm2           | 1022.7     | 1022.3      | -0.4085 |
| 64       | 5e+12           | 5E12n/cm2           | 1030.3     | 1029.8      | -0.4208 |
| 65       | 5e+12           | 5E12n/cm2           | 1020.9     | 1020.8      | -0.0626 |
| 66       | 5e+12           | 5E12n/cm2           | 1019.7     | 1018.4      | -1.294  |
| 67       | 5e+12           | 5E12n/cm2           | 1021.5     | 1021.5      | 0.0638  |
| 68       | 1e+13           | 1E13n/cm2           | 1023.7     | 1021.2      | -2.5399 |
| 69       | 1e+13           | 1E13n/cm2           | 1008.6     | 1006.5      | -2.0887 |
| 70       | 1e+13           | 1E13n/cm2           | 1024.5     | 1022.6      | -1.8941 |
| 71       | 1e+13           | 1E13n/cm2           | 1025.7     | 1023.1      | -2.5277 |

NDD vs Post - Pre Exposure Delta

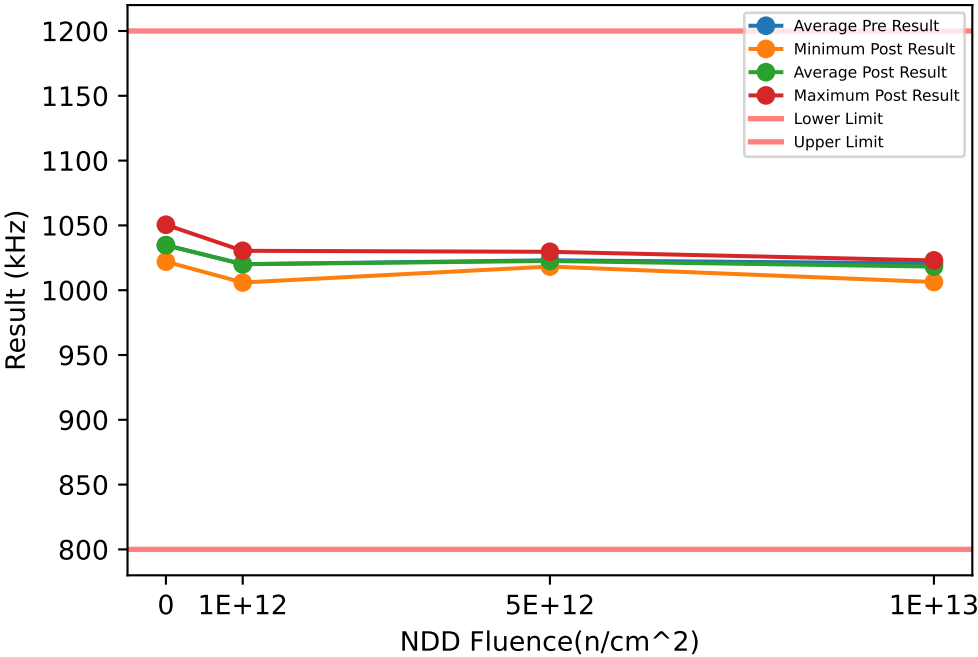


Test Statistics (kHz)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 1022.1           | 1034.8           | 1050.7           | 14.521           | 1022.1            | 1034.9            | 1050.7            | 14.514            | 0.0186    | 0.0373    | 0.0718    | 0.029913  |
| 1e+12           | 1005.9           | 1020.2           | 1031             | 10.455           | 1006.1            | 1020.1            | 1030.5            | 10.189            | -0.5441   | -0.14505  | 0.2483    | 0.38979   |
| 5e+12           | 1019.7           | 1023.1           | 1030.3           | 4.852            | 1018.4            | 1022.6            | 1029.8            | 4.9838            | -1.294    | -0.4284   | 0.0638    | 0.61248   |
| 1e+13           | 1008.6           | 1020.6           | 1025.7           | 8.0412           | 1006.5            | 1018.4            | 1023.1            | 7.9277            | -2.5399   | -2.2626   | -1.8941   | 0.32311   |

Device Test: 35.5 SWITCHING\_FREQ|/CFLYP|///10mA/6.3/@F\_SW\_1302

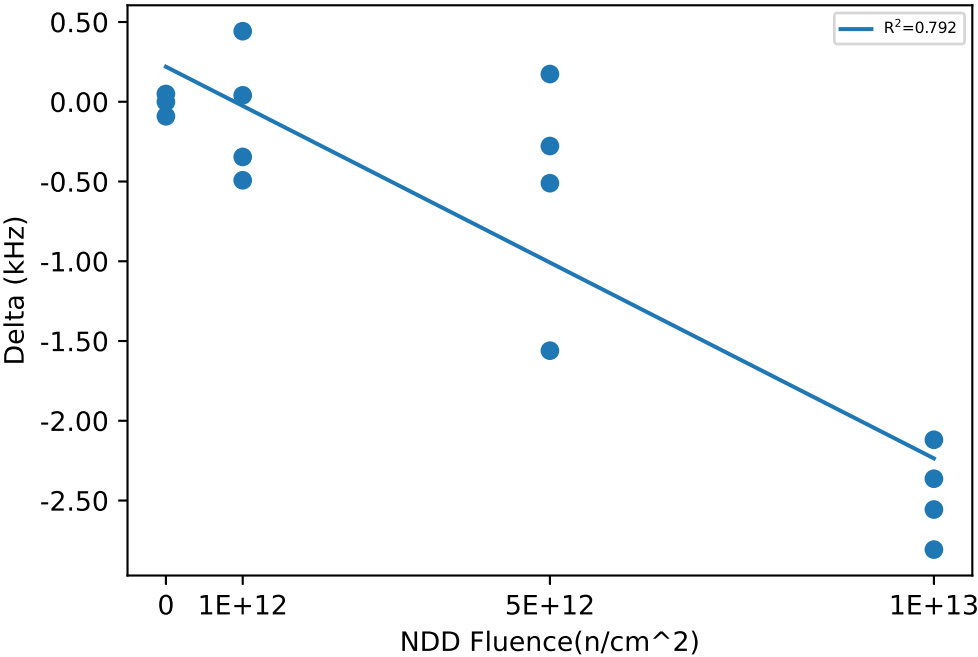
NDD vs Result Stats



Test Results (Lower Limit = 800.0, Upper Limit = 1200.0 (kHz))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 1050.6     | 1050.5      | -0.0909 |
| 2        | 0               | CU2                 | 1031.6     | 1031.6      | -0.0008 |
| 3        | 0               | CU3                 | 1022       | 1022.1      | 0.0488  |
| 60       | 1e+12           | 1E12n/cm2           | 1030.9     | 1030.4      | -0.4923 |
| 61       | 1e+12           | 1E12n/cm2           | 1021       | 1021.4      | 0.4424  |
| 62       | 1e+12           | 1E12n/cm2           | 1005.9     | 1005.9      | 0.0403  |
| 63       | 1e+12           | 1E12n/cm2           | 1022.7     | 1022.3      | -0.3459 |
| 64       | 5e+12           | 5E12n/cm2           | 1030.1     | 1029.6      | -0.5106 |
| 65       | 5e+12           | 5E12n/cm2           | 1021       | 1020.7      | -0.2775 |
| 66       | 5e+12           | 5E12n/cm2           | 1019.8     | 1018.2      | -1.5605 |
| 67       | 5e+12           | 5E12n/cm2           | 1021.4     | 1021.6      | 0.1738  |
| 68       | 1e+13           | 1E13n/cm2           | 1023.6     | 1021        | -2.5564 |
| 69       | 1e+13           | 1E13n/cm2           | 1008.7     | 1006.3      | -2.3634 |
| 70       | 1e+13           | 1E13n/cm2           | 1024.6     | 1022.5      | -2.1192 |
| 71       | 1e+13           | 1E13n/cm2           | 1025.8     | 1023        | -2.8077 |

NDD vs Post - Pre Exposure Delta

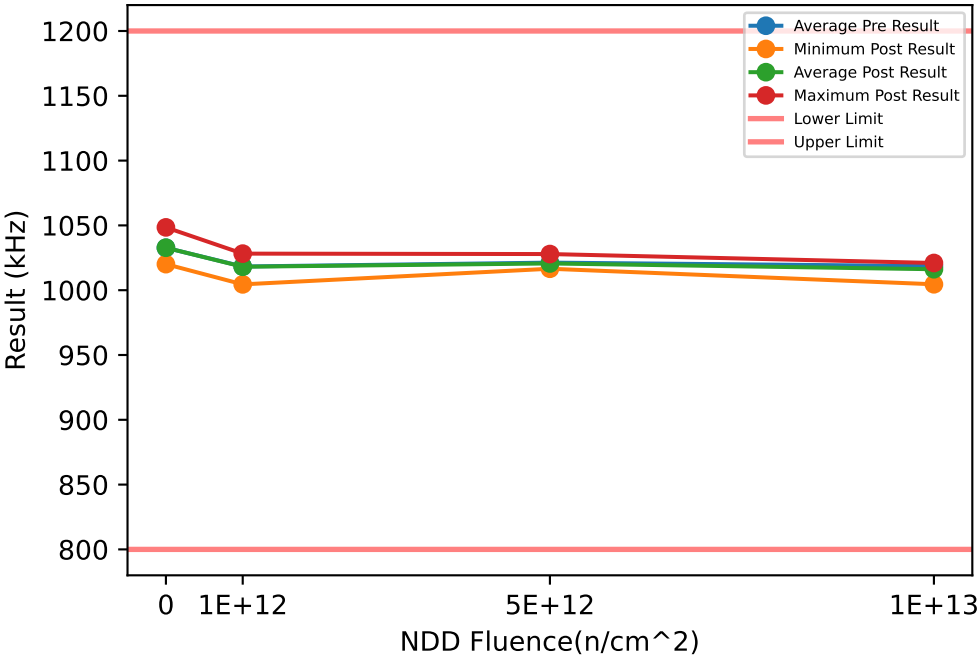


Test Statistics (kHz)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 1022             | 1034.7           | 1050.6           | 14.551           | 1022.1            | 1034.7            | 1050.5            | 14.48             | -0.0909   | -0.0143   | 0.0488    | 0.070822  |
| 1e+12           | 1005.9           | 1020.1           | 1030.9           | 10.42            | 1005.9            | 1020              | 1030.4            | 10.222            | -0.4923   | -0.088875 | 0.4424    | 0.41943   |
| 5e+12           | 1019.8           | 1023.1           | 1030.1           | 4.756            | 1018.2            | 1022.5            | 1029.6            | 4.9353            | -1.5605   | -0.5437   | 0.1738    | 0.73499   |
| 1e+13           | 1008.7           | 1020.7           | 1025.8           | 8.0414           | 1006.3            | 1018.2            | 1023              | 7.9684            | -2.8077   | -2.4617   | -2.1192   | 0.29192   |

Device Test: 35.6 SWITCHING\_FREQ|/CFLYP///400mA/6.3/@F\_SW\_1302

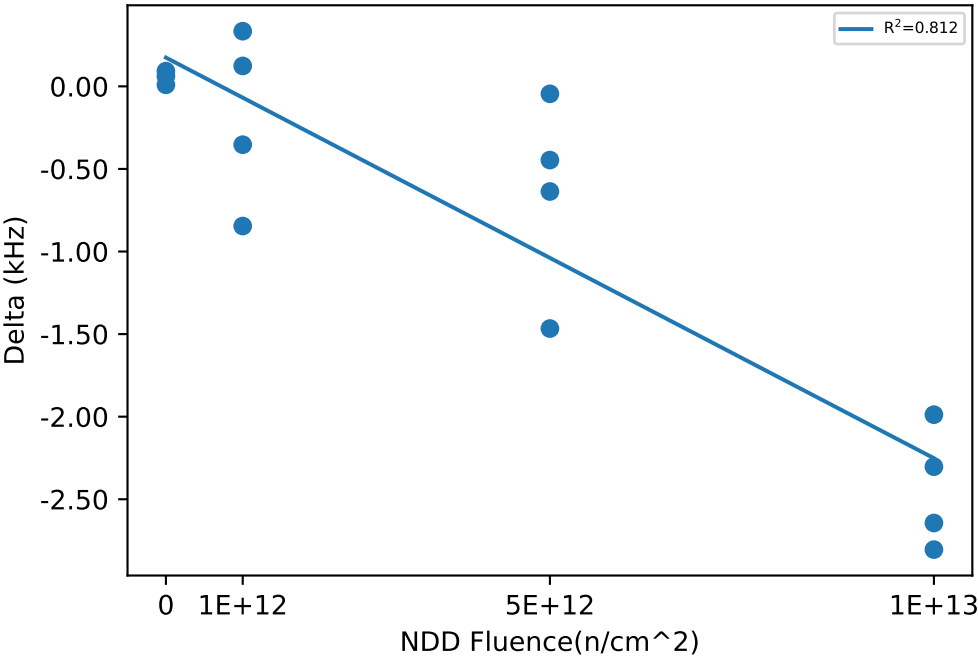
NDD vs Result Stats



Test Results (Lower Limit = 800.0, Upper Limit = 1200.0 (kHz))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 1048.4     | 1048.5      | 0.0921  |
| 2        | 0               | CU2                 | 1029.7     | 1029.7      | 0.0615  |
| 3        | 0               | CU3                 | 1020.1     | 1020.1      | 0.0093  |
| 60       | 1e+12           | 1E12n/cm2           | 1029.1     | 1028.2      | -0.8458 |
| 61       | 1e+12           | 1E12n/cm2           | 1019.1     | 1019.4      | 0.3339  |
| 62       | 1e+12           | 1E12n/cm2           | 1004.4     | 1004.5      | 0.1236  |
| 63       | 1e+12           | 1E12n/cm2           | 1020.6     | 1020.3      | -0.3533 |
| 64       | 5e+12           | 5E12n/cm2           | 1028.5     | 1027.9      | -0.6366 |
| 65       | 5e+12           | 5E12n/cm2           | 1019       | 1018.5      | -0.4464 |
| 66       | 5e+12           | 5E12n/cm2           | 1018       | 1016.6      | -1.4664 |
| 67       | 5e+12           | 5E12n/cm2           | 1019.6     | 1019.6      | -0.0453 |
| 68       | 1e+13           | 1E13n/cm2           | 1021.5     | 1018.8      | -2.6439 |
| 69       | 1e+13           | 1E13n/cm2           | 1006.9     | 1004.6      | -2.3027 |
| 70       | 1e+13           | 1E13n/cm2           | 1022.3     | 1020.3      | -1.9879 |
| 71       | 1e+13           | 1E13n/cm2           | 1023.8     | 1021        | -2.8048 |

NDD vs Post - Pre Exposure Delta

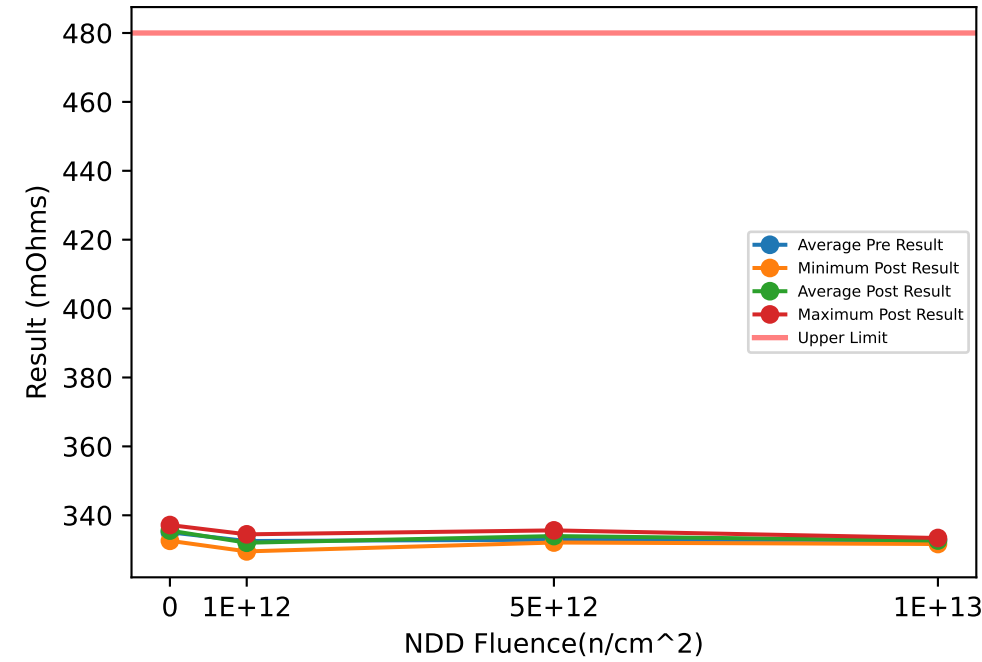


Test Statistics (kHz)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 1020.1           | 1032.7           | 1048.4           | 14.383           | 1020.1            | 1032.8            | 1048.5            | 14.423            | 0.0093    | 0.0543    | 0.0921    | 0.041867  |
| 1e+12           | 1004.4           | 1018.3           | 1029.1           | 10.262           | 1004.5            | 1018.1            | 1028.2            | 9.8988            | -0.8458   | -0.1854   | 0.3339    | 0.52582   |
| 5e+12           | 1018             | 1021.3           | 1028.5           | 4.8754           | 1016.6            | 1020.6            | 1027.9            | 4.9978            | -1.4664   | -0.64867  | -0.0453   | 0.59827   |
| 1e+13           | 1006.9           | 1018.6           | 1023.8           | 7.8862           | 1004.6            | 1016.2            | 1021              | 7.7915            | -2.8048   | -2.4348   | -1.9879   | 0.36414   |

Device Test: 40.2 RDSON|//SW1///5/@SW1\_RDSON

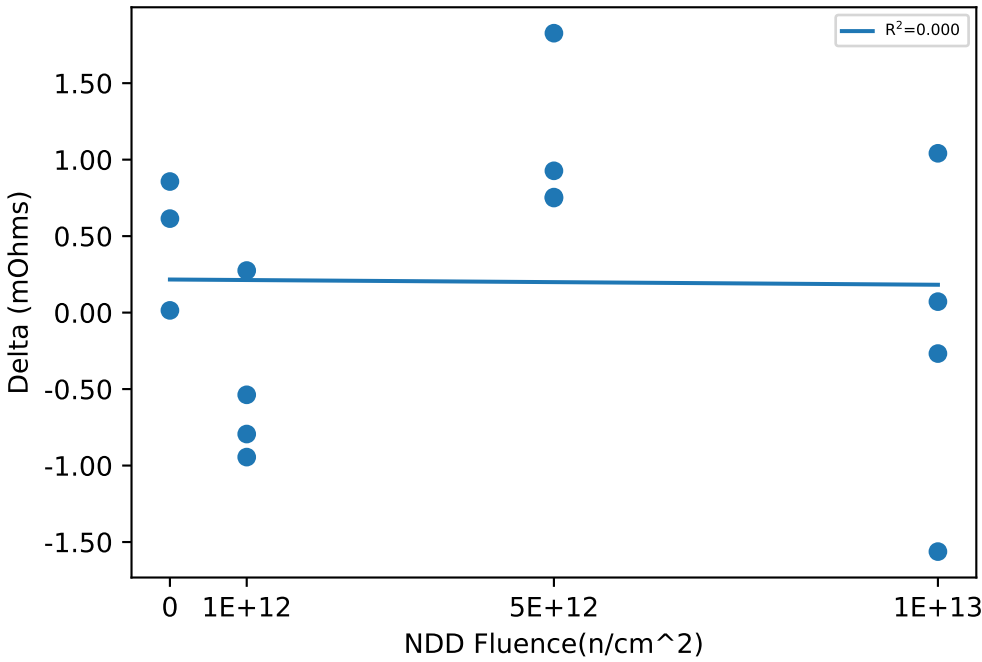
NDD vs Result Stats



Test Results (Upper Limit = 480.0 (mOhms))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 336.55     | 337.17      | 0.6145  |
| 2        | 0               | CU2                 | 331.74     | 332.59      | 0.857   |
| 3        | 0               | CU3                 | 336.89     | 336.91      | 0.0145  |
| 60       | 1e+12           | 1E12n/cm2           | 332.03     | 331.09      | -0.9447 |
| 61       | 1e+12           | 1E12n/cm2           | 330.31     | 329.52      | -0.7939 |
| 62       | 1e+12           | 1E12n/cm2           | 334.2      | 334.47      | 0.2751  |
| 63       | 1e+12           | 1E12n/cm2           | 333.58     | 333.04      | -0.5374 |
| 64       | 5e+12           | 5E12n/cm2           | 331.34     | 332.09      | 0.7491  |
| 65       | 5e+12           | 5E12n/cm2           | 332.94     | 333.87      | 0.927   |
| 66       | 5e+12           | 5E12n/cm2           | 333.79     | 335.62      | 1.8267  |
| 67       | 5e+12           | 5E12n/cm2           | 333.55     | 334.31      | 0.755   |
| 68       | 1e+13           | 1E13n/cm2           | 332.37     | 333.41      | 1.0415  |
| 69       | 1e+13           | 1E13n/cm2           | 334.95     | 333.38      | -1.5625 |
| 70       | 1e+13           | 1E13n/cm2           | 332.49     | 332.22      | -0.2678 |
| 71       | 1e+13           | 1E13n/cm2           | 331.59     | 331.66      | 0.0717  |

NDD vs Post - Pre Exposure Delta

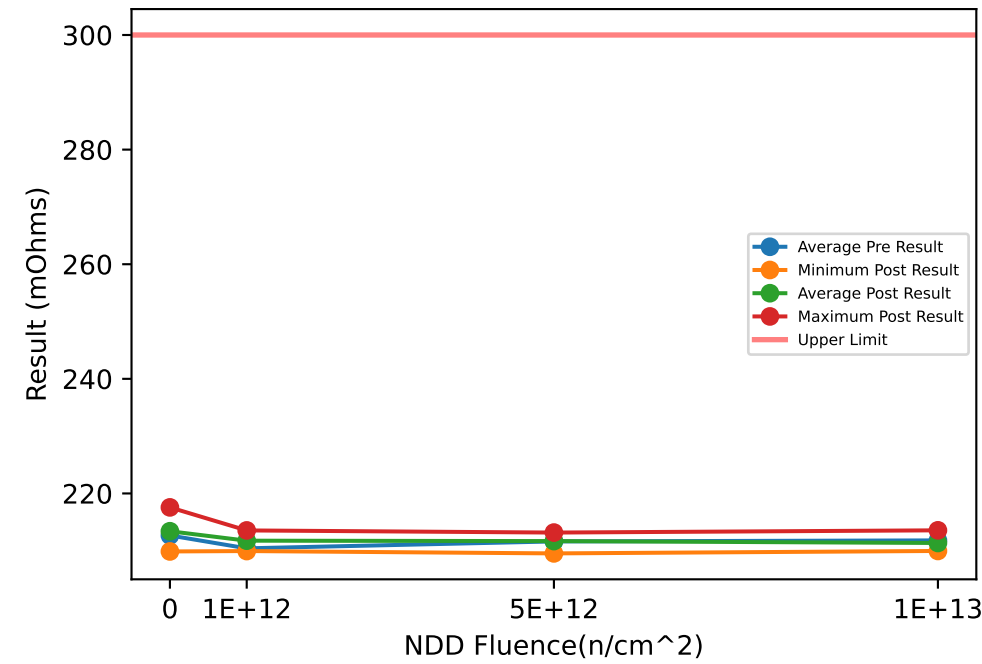


Test Statistics (mOhms)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 331.74           | 335.06           | 336.89           | 2.8848           | 332.59            | 335.56            | 337.17            | 2.57              | 0.0145    | 0.49533   | 0.857     | 0.43371   |
| 1e+12           | 330.31           | 332.53           | 334.2            | 1.7373           | 329.52            | 332.03            | 334.47            | 2.1751            | -0.9447   | -0.50023  | 0.2751    | 0.54354   |
| 5e+12           | 331.34           | 332.91           | 333.79           | 1.1036           | 332.09            | 333.97            | 335.62            | 1.4581            | 0.7491    | 1.0644    | 1.8267    | 0.51482   |
| 1e+13           | 331.59           | 332.85           | 334.95           | 1.4547           | 331.66            | 332.67            | 333.41            | 0.87141           | -1.5625   | -0.17928  | 1.0415    | 1.0762    |

Device Test: 40.3 RDSON|//SW3///5/@SW3\_RDSON

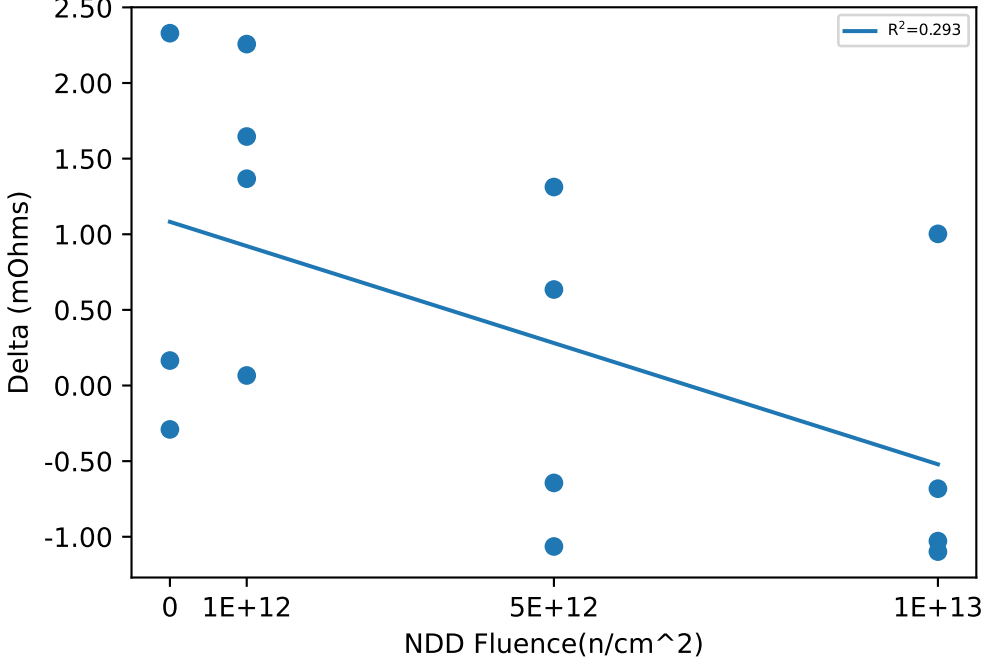
NDD vs Result Stats



Test Results (Upper Limit = 300.0 (mOhms))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 215.24     | 217.57      | 2.3293  |
| 2        | 0               | CU2                 | 210.17     | 209.88      | -0.2902 |
| 3        | 0               | CU3                 | 212.6      | 212.77      | 0.1651  |
| 60       | 1e+12           | 1E12n/cm2           | 209.88     | 209.95      | 0.0663  |
| 61       | 1e+12           | 1E12n/cm2           | 209.13     | 210.5       | 1.3673  |
| 62       | 1e+12           | 1E12n/cm2           | 211.29     | 213.55      | 2.2572  |
| 63       | 1e+12           | 1E12n/cm2           | 211.39     | 213.04      | 1.6462  |
| 64       | 5e+12           | 5E12n/cm2           | 210.6      | 209.54      | -1.0641 |
| 65       | 5e+12           | 5E12n/cm2           | 213.34     | 212.69      | -0.6439 |
| 66       | 5e+12           | 5E12n/cm2           | 211.86     | 213.17      | 1.3123  |
| 67       | 5e+12           | 5E12n/cm2           | 210.71     | 211.34      | 0.6347  |
| 68       | 1e+13           | 1E13n/cm2           | 212.56     | 213.56      | 1.0026  |
| 69       | 1e+13           | 1E13n/cm2           | 211.16     | 210.14      | -1.0287 |
| 70       | 1e+13           | 1E13n/cm2           | 210.65     | 209.96      | -0.6821 |
| 71       | 1e+13           | 1E13n/cm2           | 212.86     | 211.76      | -1.098  |

NDD vs Post - Pre Exposure Delta

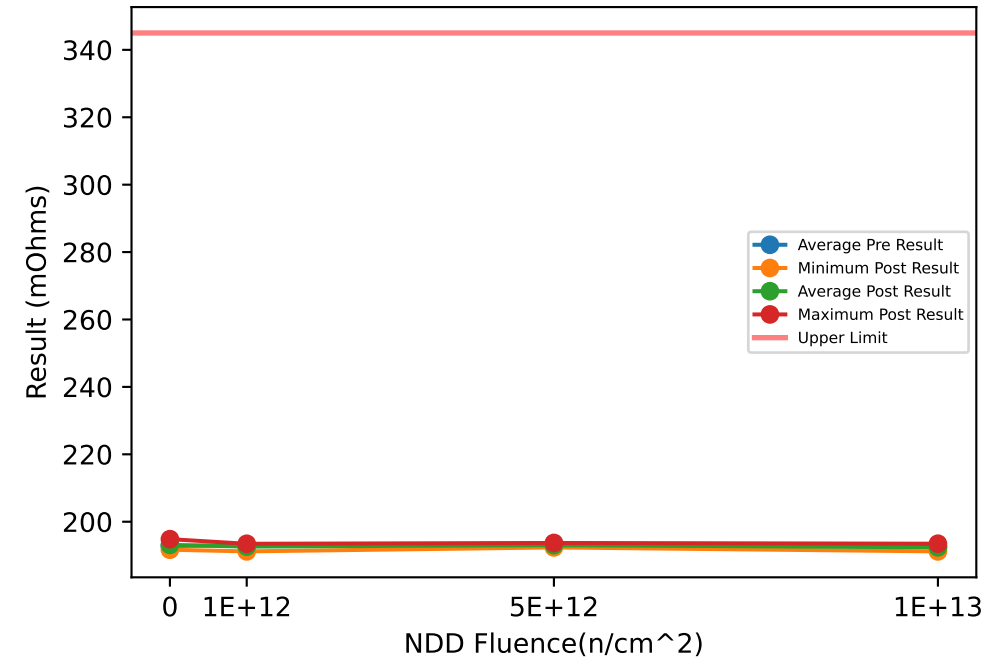


Test Statistics (mOhms)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 210.17           | 212.67           | 215.24           | 2.5361           | 209.88            | 213.4             | 217.57            | 3.8847            | -0.2902   | 0.73473   | 2.3293    | 1.3996    |
| 1e+12           | 209.13           | 210.42           | 211.39           | 1.1025           | 209.95            | 211.76            | 213.55            | 1.7978            | 0.0663    | 1.3343    | 2.2572    | 0.92339   |
| 5e+12           | 210.6            | 211.63           | 213.34           | 1.2752           | 209.54            | 211.69            | 213.17            | 1.6289            | -1.0641   | 0.05975   | 1.3123    | 1.1042    |
| 1e+13           | 210.65           | 211.81           | 212.86           | 1.0716           | 209.96            | 211.36            | 213.56            | 1.6805            | -1.098    | -0.45155  | 1.0026    | 0.98636   |

Device Test: 40.5 RDSON|//SW2///5/@SW2\_RDSON

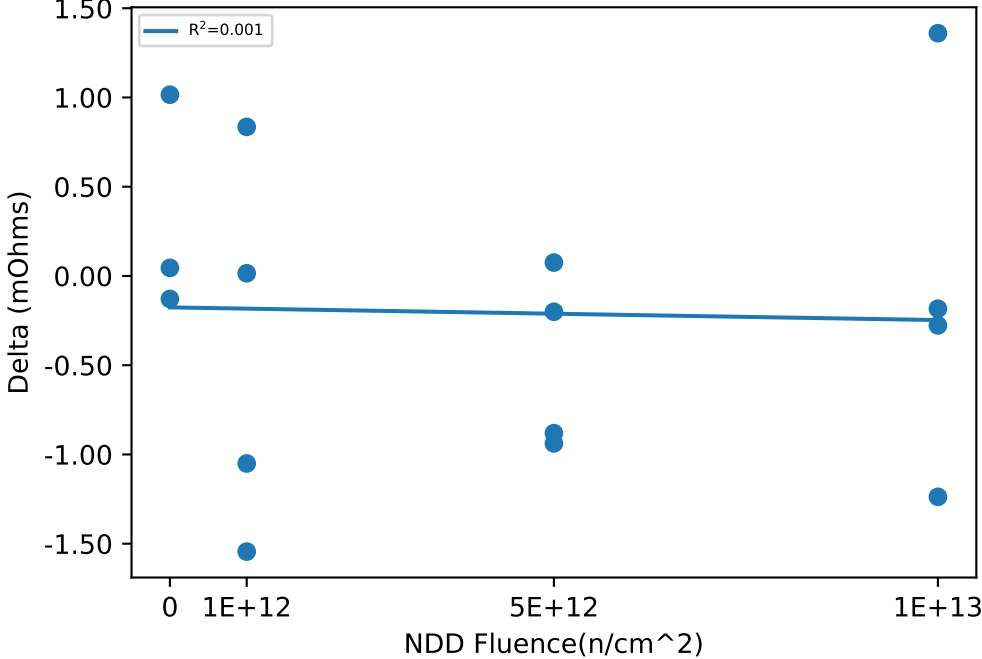
NDD vs Result Stats



Test Results (Upper Limit = 345.0 (mOhms))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 193.81     | 194.83      | 1.0154  |
| 2        | 0               | CU2                 | 191.82     | 191.69      | -0.1287 |
| 3        | 0               | CU3                 | 192.8      | 192.84      | 0.0453  |
| 60       | 1e+12           | 1E12n/cm2           | 192.25     | 191.2       | -1.0505 |
| 61       | 1e+12           | 1E12n/cm2           | 191.81     | 192.65      | 0.8352  |
| 62       | 1e+12           | 1E12n/cm2           | 193.44     | 193.46      | 0.0152  |
| 63       | 1e+12           | 1E12n/cm2           | 194.71     | 193.17      | -1.5442 |
| 64       | 5e+12           | 5E12n/cm2           | 193.22     | 193.29      | 0.075   |
| 65       | 5e+12           | 5E12n/cm2           | 193.9      | 193.7       | -0.2006 |
| 66       | 5e+12           | 5E12n/cm2           | 193.25     | 192.37      | -0.8807 |
| 67       | 5e+12           | 5E12n/cm2           | 193.77     | 192.83      | -0.9381 |
| 68       | 1e+13           | 1E13n/cm2           | 192.11     | 193.47      | 1.3601  |
| 69       | 1e+13           | 1E13n/cm2           | 194.56     | 193.32      | -1.2374 |
| 70       | 1e+13           | 1E13n/cm2           | 191.47     | 191.2       | -0.277  |
| 71       | 1e+13           | 1E13n/cm2           | 191.81     | 191.63      | -0.1834 |

NDD vs Post - Pre Exposure Delta

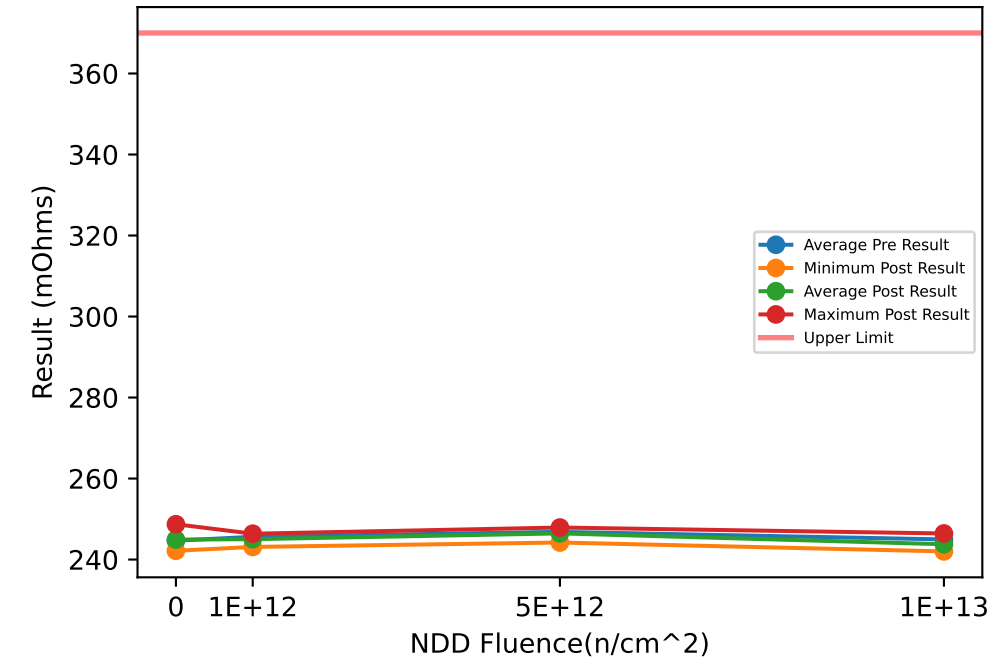


Test Statistics (mOhms)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 191.82           | 192.81           | 193.81           | 0.99512          | 191.69            | 193.12            | 194.83            | 1.5856            | -0.1287   | 0.31067   | 1.0154    | 0.61649   |
| 1e+12           | 191.81           | 193.05           | 194.71           | 1.301            | 191.2             | 192.62            | 193.46            | 1.0018            | -1.5442   | -0.43607  | 0.8352    | 1.0685    |
| 5e+12           | 193.22           | 193.53           | 193.9            | 0.34956          | 192.37            | 193.05            | 193.7             | 0.5747            | -0.9381   | -0.4861   | 0.075     | 0.50211   |
| 1e+13           | 191.47           | 192.49           | 194.56           | 1.4056           | 191.2             | 192.4             | 193.47            | 1.1624            | -1.2374   | -0.084425 | 1.3601    | 1.0744    |

Device Test: 40.6 RDSON|//SW4///5/@SW4\_RDSON

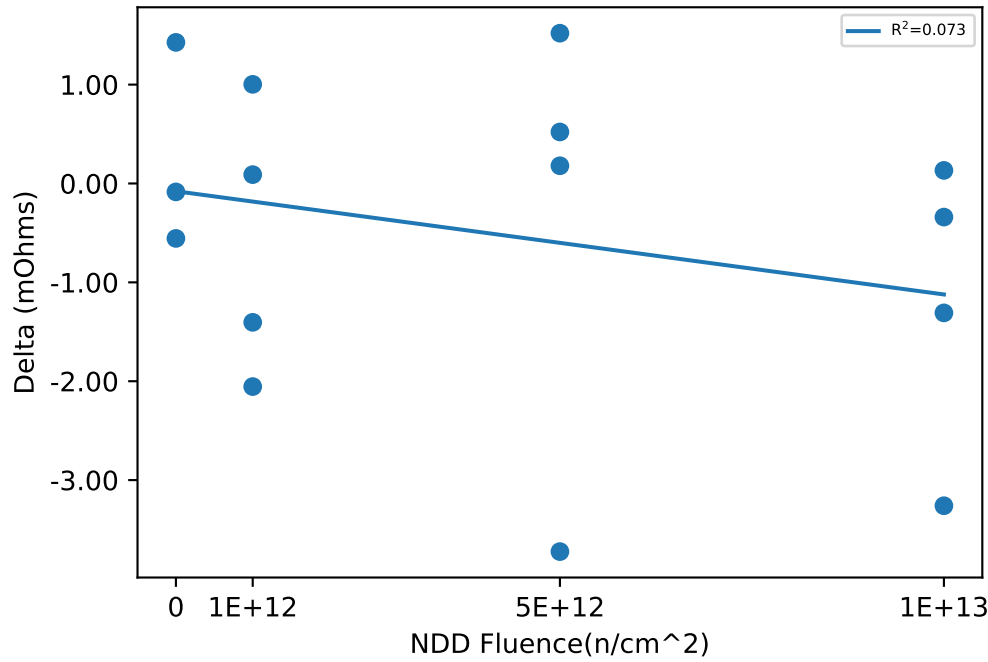
NDD vs Result Stats



Test Results (Upper Limit = 370.0 (mOhms))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 247.29     | 248.72      | 1.4271  |
| 2        | 0               | CU2                 | 242.72     | 242.16      | -0.5557 |
| 3        | 0               | CU3                 | 243.98     | 243.9       | -0.0852 |
| 60       | 1e+12           | 1E12n/cm2           | 244.52     | 243.12      | -1.4044 |
| 61       | 1e+12           | 1E12n/cm2           | 243.37     | 244.37      | 1.0027  |
| 62       | 1e+12           | 1E12n/cm2           | 246.29     | 246.38      | 0.0895  |
| 63       | 1e+12           | 1E12n/cm2           | 248.29     | 246.24      | -2.0541 |
| 64       | 5e+12           | 5E12n/cm2           | 244.71     | 246.23      | 1.52    |
| 65       | 5e+12           | 5E12n/cm2           | 247.73     | 247.91      | 0.1792  |
| 66       | 5e+12           | 5E12n/cm2           | 247.93     | 244.21      | -3.7232 |
| 67       | 5e+12           | 5E12n/cm2           | 246.97     | 247.49      | 0.521   |
| 68       | 1e+13           | 1E13n/cm2           | 246.78     | 246.44      | -0.3398 |
| 69       | 1e+13           | 1E13n/cm2           | 245.27     | 242.01      | -3.2593 |
| 70       | 1e+13           | 1E13n/cm2           | 243.91     | 242.6       | -1.3088 |
| 71       | 1e+13           | 1E13n/cm2           | 243.92     | 244.05      | 0.1323  |

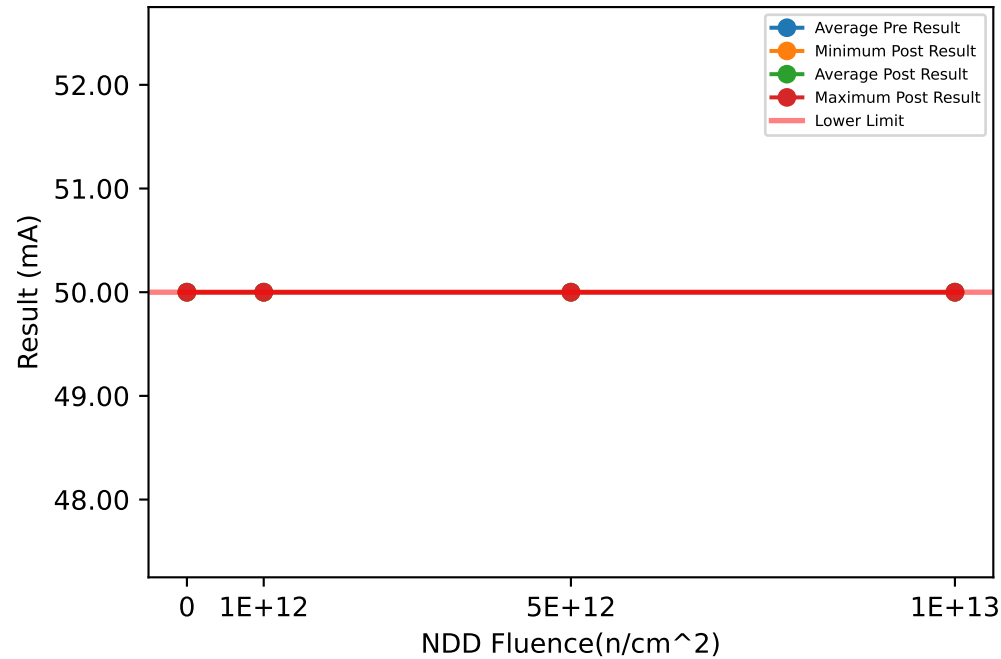
NDD vs Post - Pre Exposure Delta



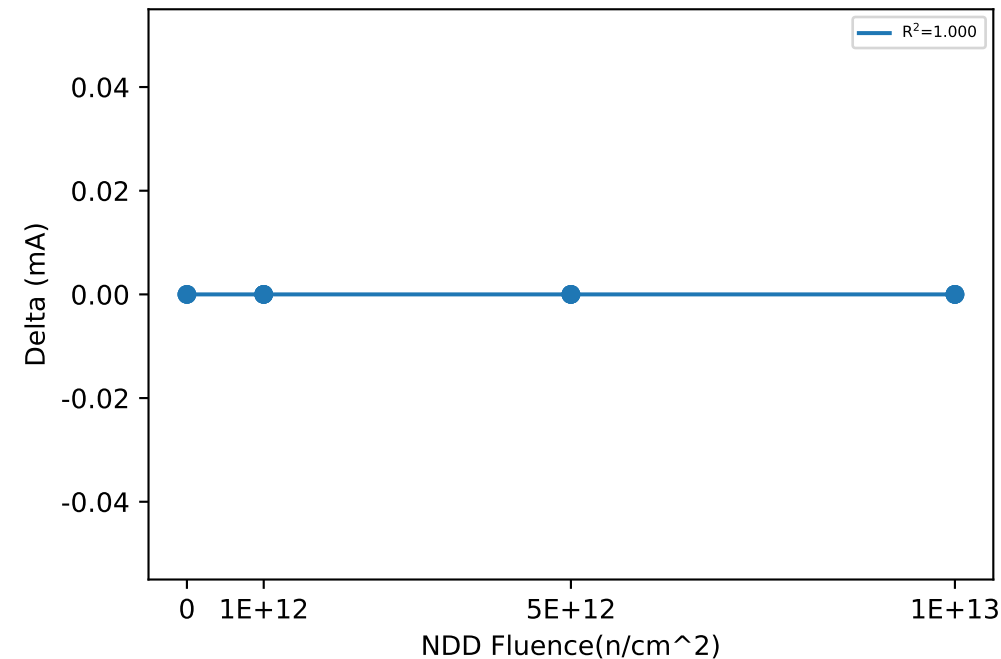
Test Statistics (mOhms)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 242.72           | 244.66           | 247.29           | 2.3604           | 242.16            | 244.93            | 248.72            | 3.3958            | -0.5557   | 0.26207   | 1.4271    | 1.036     |
| 1e+12           | 243.37           | 245.62           | 248.29           | 2.1493           | 243.12            | 245.02            | 246.38            | 1.5674            | -2.0541   | -0.59157  | 1.0027    | 1.3911    |
| 5e+12           | 244.71           | 246.83           | 247.93           | 1.477            | 244.21            | 246.46            | 247.91            | 1.6623            | -3.7232   | -0.37575  | 1.52      | 2.303     |
| 1e+13           | 243.91           | 244.97           | 246.78           | 1.366            | 242.01            | 243.78            | 246.44            | 1.9713            | -3.2593   | -1.1939   | 0.1323    | 1.5019    |

NDD vs Result Stats



NDD vs Post - Pre Exposure Delta



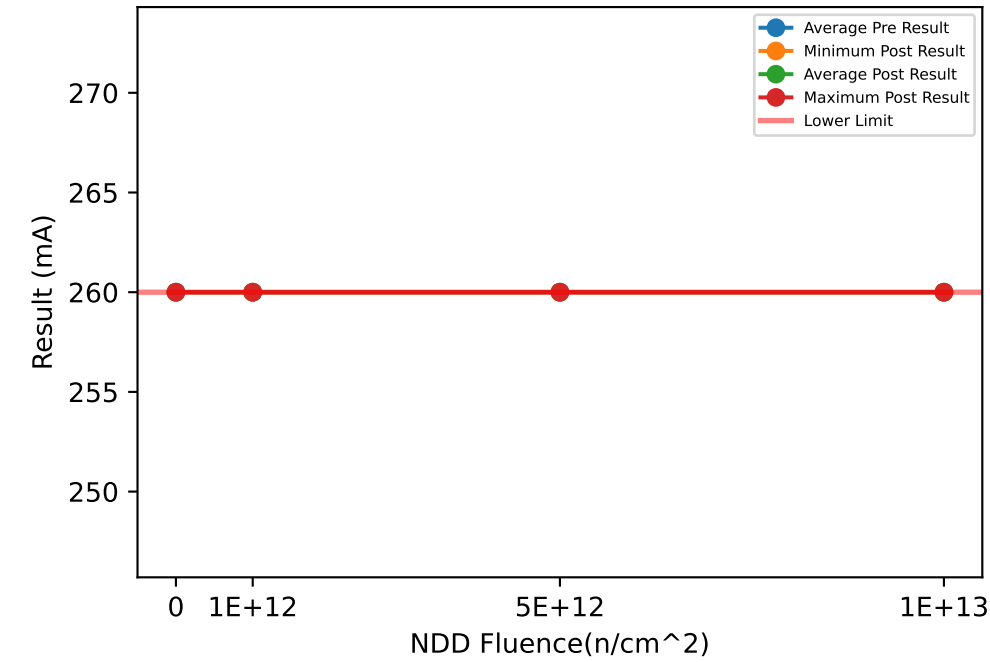
Test Results (Lower Limit = 50.0 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta |
|----------|-----------------|---------------------|------------|-------------|-------|
| 1        | 0               | CU1                 | 50         | 50          | 0     |
| 2        | 0               | CU2                 | 50         | 50          | 0     |
| 3        | 0               | CU3                 | 50         | 50          | 0     |
| 60       | 1e+12           | 1E12n/cm2           | 50         | 50          | 0     |
| 61       | 1e+12           | 1E12n/cm2           | 50         | 50          | 0     |
| 62       | 1e+12           | 1E12n/cm2           | 50         | 50          | 0     |
| 63       | 1e+12           | 1E12n/cm2           | 50         | 50          | 0     |
| 64       | 5e+12           | 5E12n/cm2           | 50         | 50          | 0     |
| 65       | 5e+12           | 5E12n/cm2           | 50         | 50          | 0     |
| 66       | 5e+12           | 5E12n/cm2           | 50         | 50          | 0     |
| 67       | 5e+12           | 5E12n/cm2           | 50         | 50          | 0     |
| 68       | 1e+13           | 1E13n/cm2           | 50         | 50          | 0     |
| 69       | 1e+13           | 1E13n/cm2           | 50         | 50          | 0     |
| 70       | 1e+13           | 1E13n/cm2           | 50         | 50          | 0     |
| 71       | 1e+13           | 1E13n/cm2           | 50         | 50          | 0     |

Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 50               | 50               | 50               | 0                | 50                | 50                | 50                | 0                 | 0         | 0         | 0         | 0         |
| 1e+12           | 50               | 50               | 50               | 0                | 50                | 50                | 50                | 0                 | 0         | 0         | 0         | 0         |
| 5e+12           | 50               | 50               | 50               | 0                | 50                | 50                | 50                | 0                 | 0         | 0         | 0         | 0         |
| 1e+13           | 50               | 50               | 50               | 0                | 50                | 50                | 50                | 0                 | 0         | 0         | 0         | 0         |

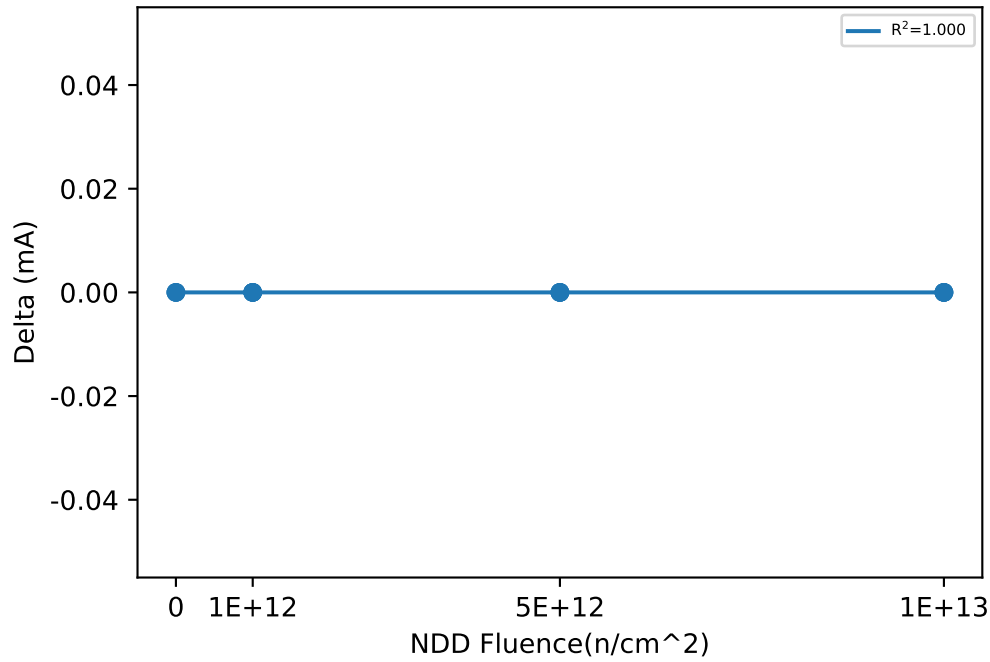
NDD vs Result Stats



Test Results (Lower Limit = 260.0 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta |
|----------|-----------------|---------------------|------------|-------------|-------|
| 1        | 0               | CU1                 | 260        | 260         | 0     |
| 2        | 0               | CU2                 | 260        | 260         | 0     |
| 3        | 0               | CU3                 | 260        | 260         | 0     |
| 60       | 1e+12           | 1E12n/cm2           | 260        | 260         | 0     |
| 61       | 1e+12           | 1E12n/cm2           | 260        | 260         | 0     |
| 62       | 1e+12           | 1E12n/cm2           | 260        | 260         | 0     |
| 63       | 1e+12           | 1E12n/cm2           | 260        | 260         | 0     |
| 64       | 5e+12           | 5E12n/cm2           | 260        | 260         | 0     |
| 65       | 5e+12           | 5E12n/cm2           | 260        | 260         | 0     |
| 66       | 5e+12           | 5E12n/cm2           | 260        | 260         | 0     |
| 67       | 5e+12           | 5E12n/cm2           | 260        | 260         | 0     |
| 68       | 1e+13           | 1E13n/cm2           | 260        | 260         | 0     |
| 69       | 1e+13           | 1E13n/cm2           | 260        | 260         | 0     |
| 70       | 1e+13           | 1E13n/cm2           | 260        | 260         | 0     |
| 71       | 1e+13           | 1E13n/cm2           | 260        | 260         | 0     |

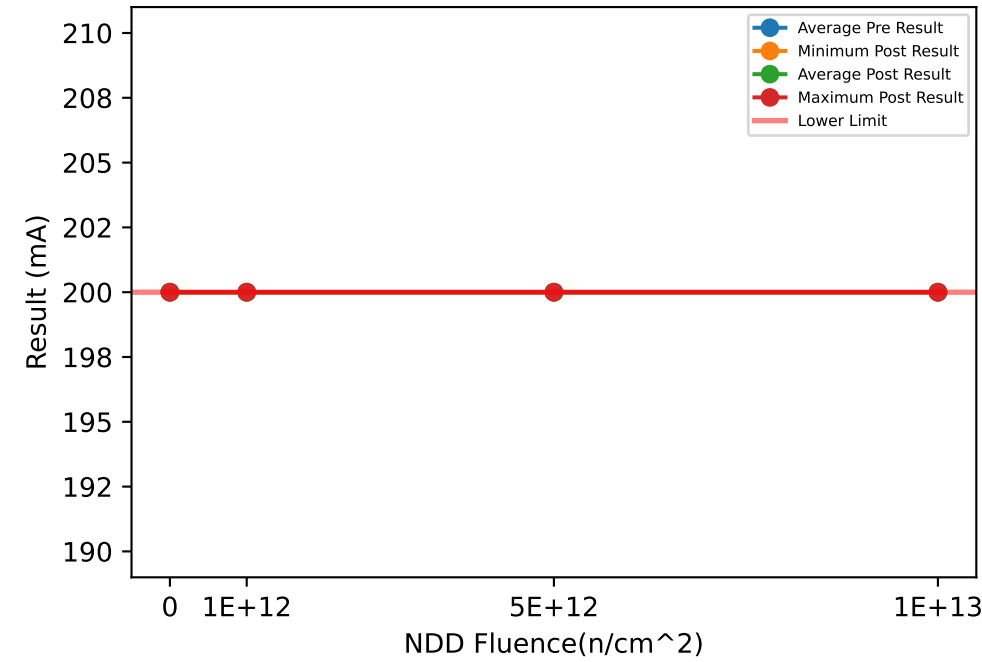
NDD vs Post - Pre Exposure Delta



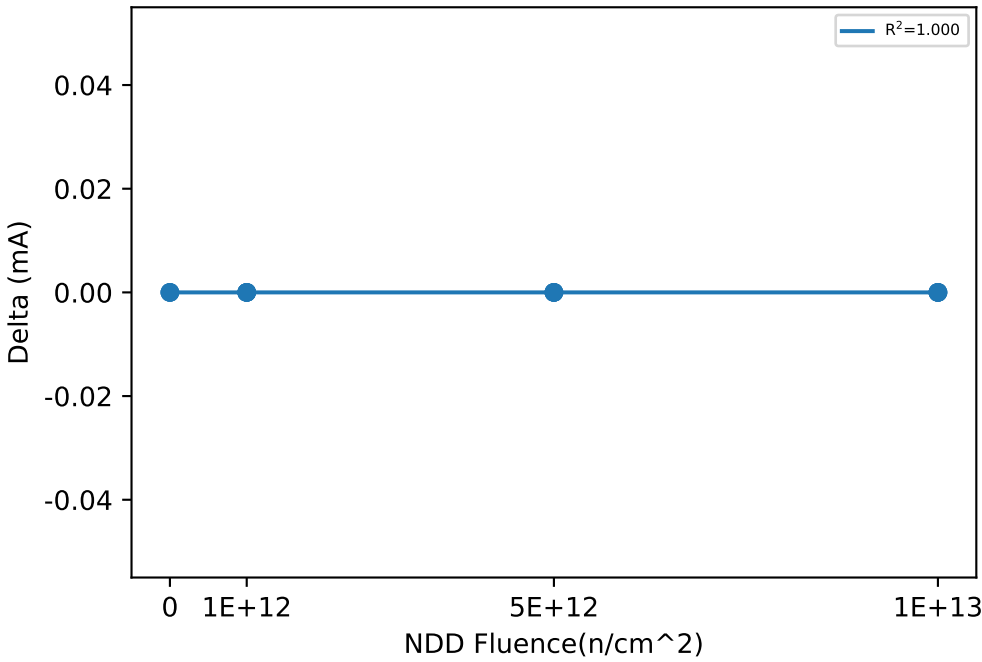
Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 260              | 260              | 260              | 0                | 260               | 260               | 260               | 0                 | 0         | 0         | 0         | 0         |
| 1e+12           | 260              | 260              | 260              | 0                | 260               | 260               | 260               | 0                 | 0         | 0         | 0         | 0         |
| 5e+12           | 260              | 260              | 260              | 0                | 260               | 260               | 260               | 0                 | 0         | 0         | 0         | 0         |
| 1e+13           | 260              | 260              | 260              | 0                | 260               | 260               | 260               | 0                 | 0         | 0         | 0         | 0         |

NDD vs Result Stats



NDD vs Post - Pre Exposure Delta



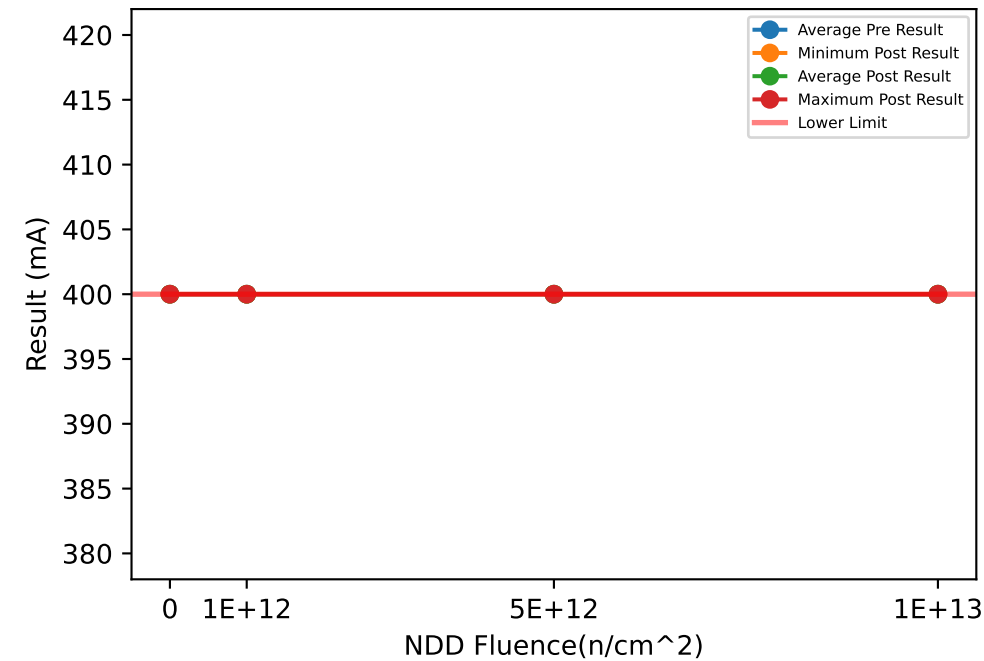
Test Results (Lower Limit = 200.0 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta |
|----------|-----------------|---------------------|------------|-------------|-------|
| 1        | 0               | CU1                 | 200        | 200         | 0     |
| 2        | 0               | CU2                 | 200        | 200         | 0     |
| 3        | 0               | CU3                 | 200        | 200         | 0     |
| 60       | 1e+12           | 1E12n/cm2           | 200        | 200         | 0     |
| 61       | 1e+12           | 1E12n/cm2           | 200        | 200         | 0     |
| 62       | 1e+12           | 1E12n/cm2           | 200        | 200         | 0     |
| 63       | 1e+12           | 1E12n/cm2           | 200        | 200         | 0     |
| 64       | 5e+12           | 5E12n/cm2           | 200        | 200         | 0     |
| 65       | 5e+12           | 5E12n/cm2           | 200        | 200         | 0     |
| 66       | 5e+12           | 5E12n/cm2           | 200        | 200         | 0     |
| 67       | 5e+12           | 5E12n/cm2           | 200        | 200         | 0     |
| 68       | 1e+13           | 1E13n/cm2           | 200        | 200         | 0     |
| 69       | 1e+13           | 1E13n/cm2           | 200        | 200         | 0     |
| 70       | 1e+13           | 1E13n/cm2           | 200        | 200         | 0     |
| 71       | 1e+13           | 1E13n/cm2           | 200        | 200         | 0     |

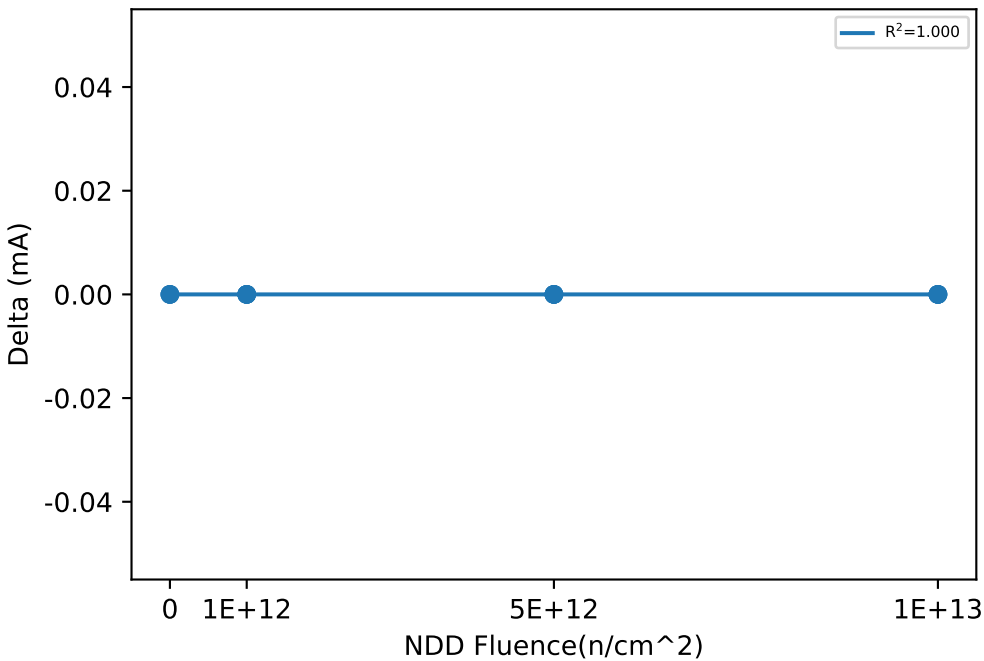
Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 200              | 200              | 200              | 0                | 200               | 200               | 200               | 0                 | 0         | 0         | 0         | 0         |
| 1e+12           | 200              | 200              | 200              | 0                | 200               | 200               | 200               | 0                 | 0         | 0         | 0         | 0         |
| 5e+12           | 200              | 200              | 200              | 0                | 200               | 200               | 200               | 0                 | 0         | 0         | 0         | 0         |
| 1e+13           | 200              | 200              | 200              | 0                | 200               | 200               | 200               | 0                 | 0         | 0         | 0         | 0         |

NDD vs Result Stats



NDD vs Post - Pre Exposure Delta



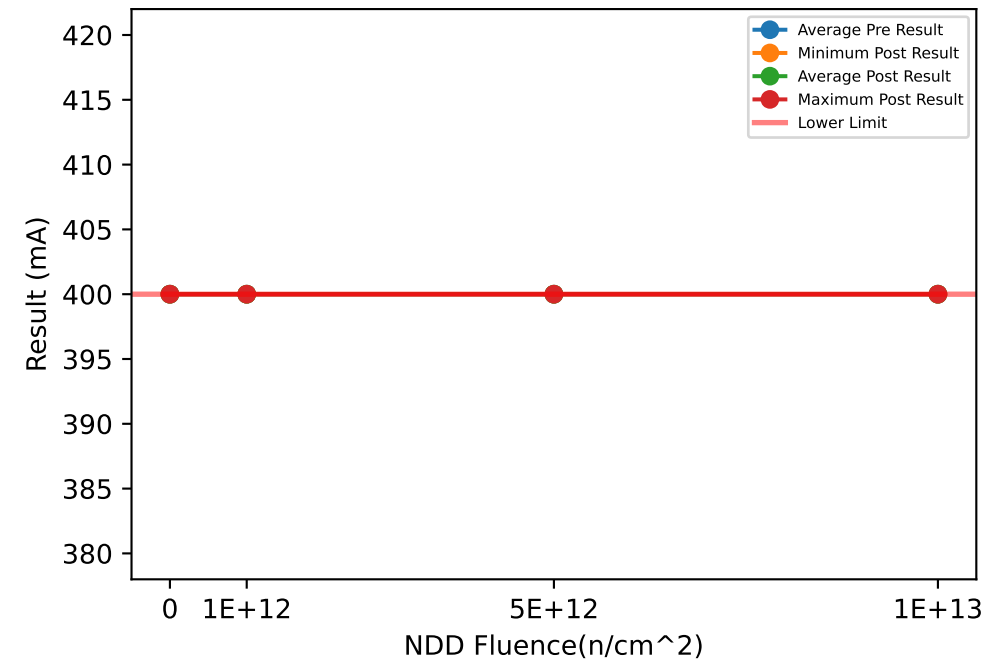
Test Results (Lower Limit = 400.0 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta |
|----------|-----------------|---------------------|------------|-------------|-------|
| 1        | 0               | CU1                 | 400        | 400         | 0     |
| 2        | 0               | CU2                 | 400        | 400         | 0     |
| 3        | 0               | CU3                 | 400        | 400         | 0     |
| 60       | 1e+12           | 1E12n/cm2           | 400        | 400         | 0     |
| 61       | 1e+12           | 1E12n/cm2           | 400        | 400         | 0     |
| 62       | 1e+12           | 1E12n/cm2           | 400        | 400         | 0     |
| 63       | 1e+12           | 1E12n/cm2           | 400        | 400         | 0     |
| 64       | 5e+12           | 5E12n/cm2           | 400        | 400         | 0     |
| 65       | 5e+12           | 5E12n/cm2           | 400        | 400         | 0     |
| 66       | 5e+12           | 5E12n/cm2           | 400        | 400         | 0     |
| 67       | 5e+12           | 5E12n/cm2           | 400        | 400         | 0     |
| 68       | 1e+13           | 1E13n/cm2           | 400        | 400         | 0     |
| 69       | 1e+13           | 1E13n/cm2           | 400        | 400         | 0     |
| 70       | 1e+13           | 1E13n/cm2           | 400        | 400         | 0     |
| 71       | 1e+13           | 1E13n/cm2           | 400        | 400         | 0     |

Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 400              | 400              | 400              | 0                | 400               | 400               | 400               | 0                 | 0         | 0         | 0         | 0         |
| 1e+12           | 400              | 400              | 400              | 0                | 400               | 400               | 400               | 0                 | 0         | 0         | 0         | 0         |
| 5e+12           | 400              | 400              | 400              | 0                | 400               | 400               | 400               | 0                 | 0         | 0         | 0         | 0         |
| 1e+13           | 400              | 400              | 400              | 0                | 400               | 400               | 400               | 0                 | 0         | 0         | 0         | 0         |

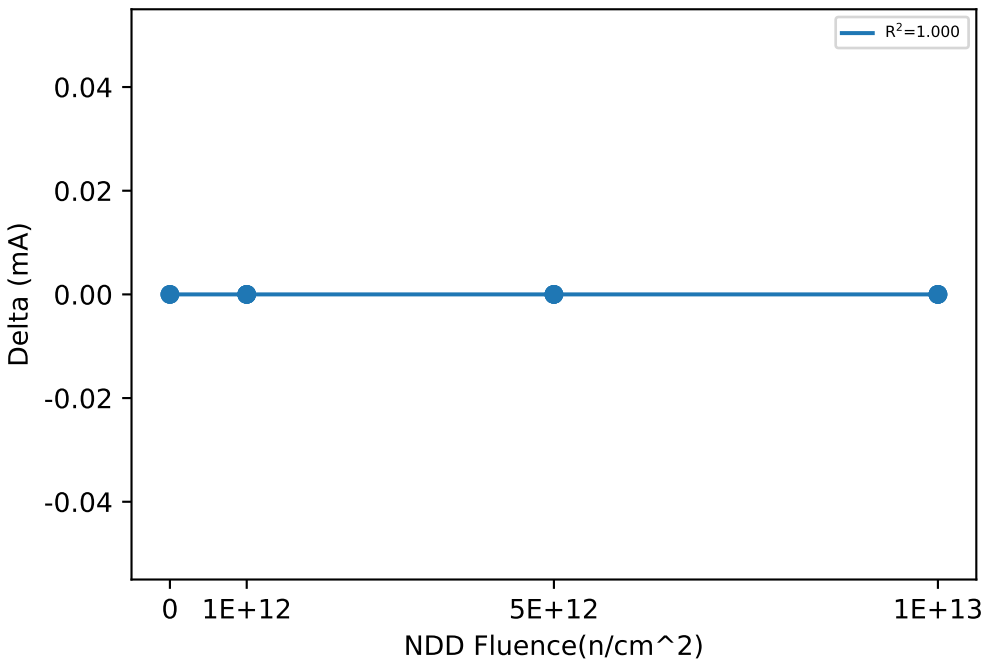
NDD vs Result Stats



Test Results (Lower Limit = 400.0 (mA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta |
|----------|-----------------|---------------------|------------|-------------|-------|
| 1        | 0               | CU1                 | 400        | 400         | 0     |
| 2        | 0               | CU2                 | 400        | 400         | 0     |
| 3        | 0               | CU3                 | 400        | 400         | 0     |
| 60       | 1e+12           | 1E12n/cm2           | 400        | 400         | 0     |
| 61       | 1e+12           | 1E12n/cm2           | 400        | 400         | 0     |
| 62       | 1e+12           | 1E12n/cm2           | 400        | 400         | 0     |
| 63       | 1e+12           | 1E12n/cm2           | 400        | 400         | 0     |
| 64       | 5e+12           | 5E12n/cm2           | 400        | 400         | 0     |
| 65       | 5e+12           | 5E12n/cm2           | 400        | 400         | 0     |
| 66       | 5e+12           | 5E12n/cm2           | 400        | 400         | 0     |
| 67       | 5e+12           | 5E12n/cm2           | 400        | 400         | 0     |
| 68       | 1e+13           | 1E13n/cm2           | 400        | 400         | 0     |
| 69       | 1e+13           | 1E13n/cm2           | 400        | 400         | 0     |
| 70       | 1e+13           | 1E13n/cm2           | 400        | 400         | 0     |
| 71       | 1e+13           | 1E13n/cm2           | 400        | 400         | 0     |

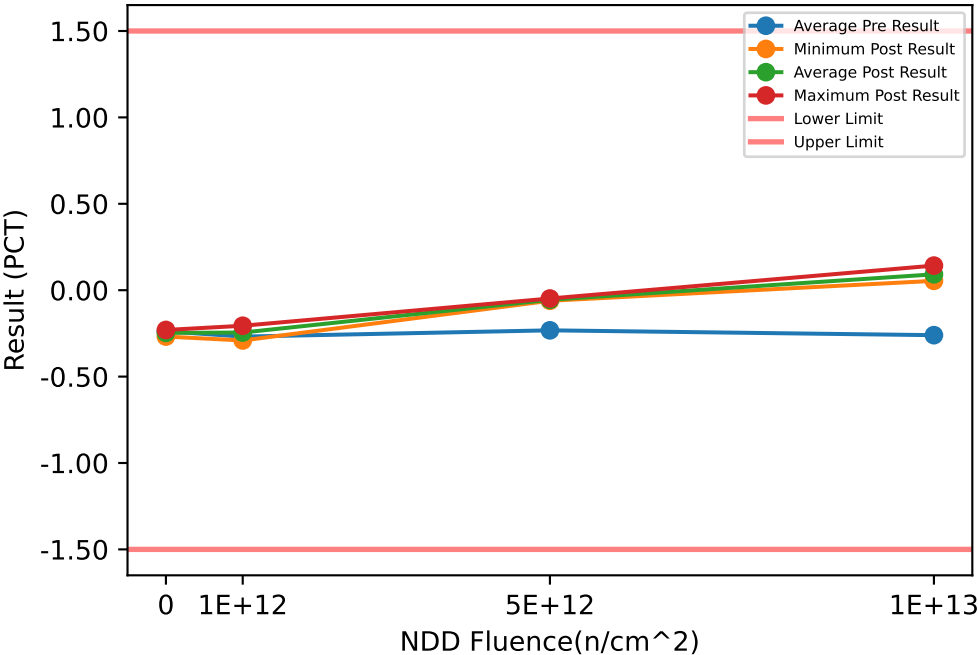
NDD vs Post - Pre Exposure Delta



Test Statistics (mA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 400              | 400              | 400              | 0                | 400               | 400               | 400               | 0                 | 0         | 0         | 0         | 0         |
| 1e+12           | 400              | 400              | 400              | 0                | 400               | 400               | 400               | 0                 | 0         | 0         | 0         | 0         |
| 5e+12           | 400              | 400              | 400              | 0                | 400               | 400               | 400               | 0                 | 0         | 0         | 0         | 0         |
| 1e+13           | 400              | 400              | 400              | 0                | 400               | 400               | 400               | 0                 | 0         | 0         | 0         | 0         |

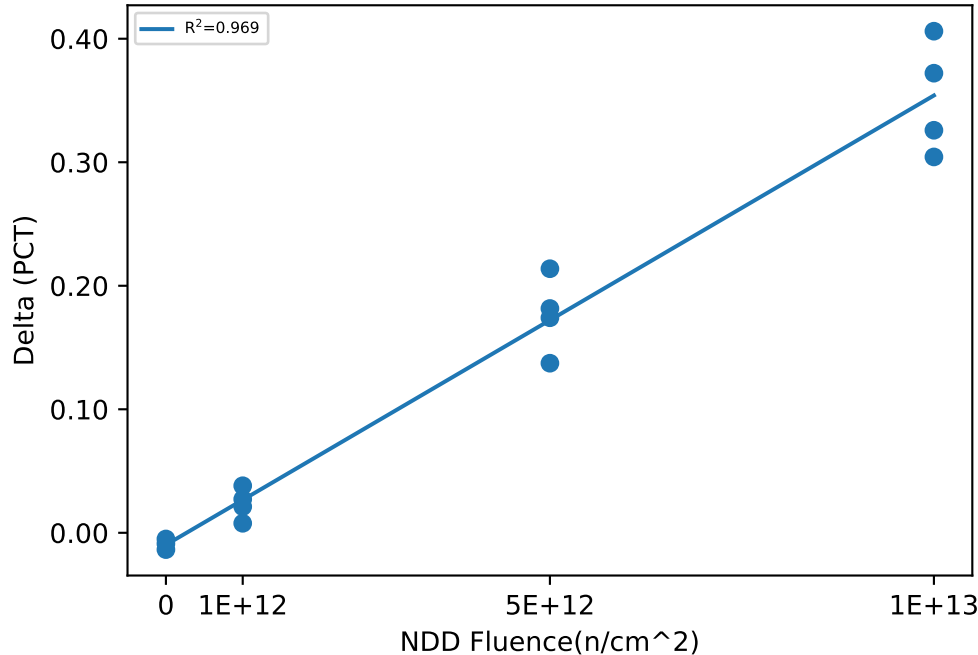
NDD vs Result Stats



Test Results (Lower Limit = -1.5, Upper Limit = 1.5 (PCT))

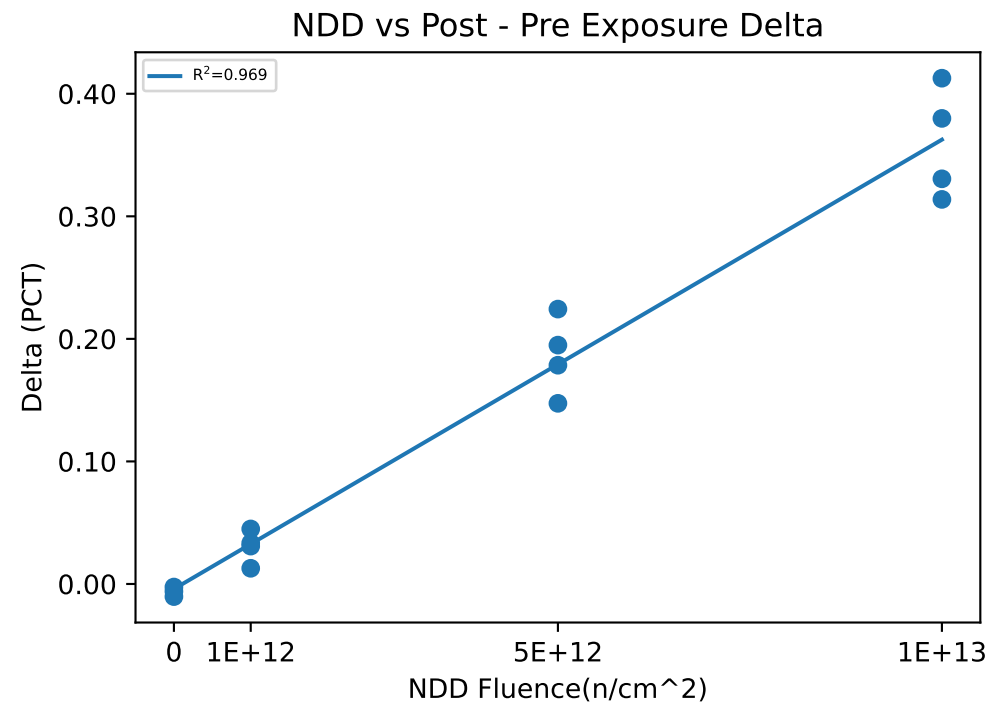
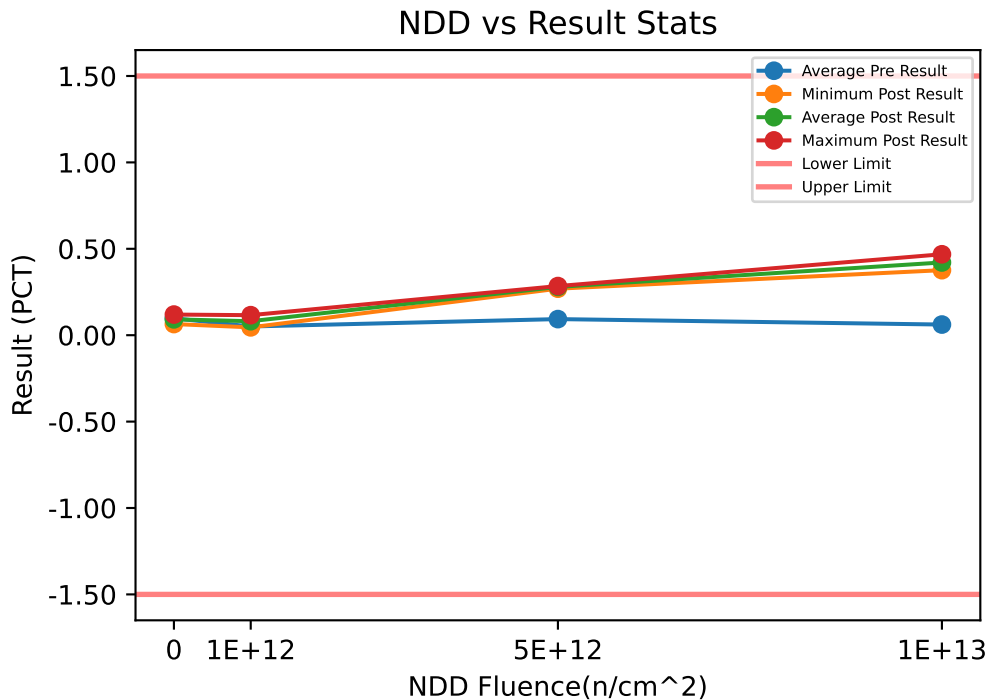
| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | -0.2288    | -0.2424     | -0.0136 |
| 2        | 0               | CU2                 | -0.2213    | -0.2301     | -0.0088 |
| 3        | 0               | CU3                 | -0.2633    | -0.2683     | -0.005  |
| 60       | 1e+12           | 1E12n/cm2           | -0.2439    | -0.2058     | 0.0381  |
| 61       | 1e+12           | 1E12n/cm2           | -0.3121    | -0.2909     | 0.0212  |
| 62       | 1e+12           | 1E12n/cm2           | -0.2463    | -0.2386     | 0.0077  |
| 63       | 1e+12           | 1E12n/cm2           | -0.2723    | -0.2451     | 0.0272  |
| 64       | 5e+12           | 5E12n/cm2           | -0.1985    | -0.0612     | 0.1373  |
| 65       | 5e+12           | 5E12n/cm2           | -0.2297    | -0.0481     | 0.1816  |
| 66       | 5e+12           | 5E12n/cm2           | -0.2275    | -0.0534     | 0.1741  |
| 67       | 5e+12           | 5E12n/cm2           | -0.2734    | -0.0596     | 0.2138  |
| 68       | 1e+13           | 1E13n/cm2           | -0.2502    | 0.0541      | 0.3043  |
| 69       | 1e+13           | 1E13n/cm2           | -0.2638    | 0.1423      | 0.4061  |
| 70       | 1e+13           | 1E13n/cm2           | -0.274     | 0.0981      | 0.3721  |
| 71       | 1e+13           | 1E13n/cm2           | -0.253     | 0.0729      | 0.3259  |

NDD vs Post - Pre Exposure Delta



Test Statistics (PCT)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta  | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|------------|-----------|-----------|
| 0               | -0.2633          | -0.2378          | -0.2213          | 0.0224           | -0.2683           | -0.24693          | -0.2301           | 0.019499          | -0.0136   | -0.0091333 | -0.005    | 0.0043097 |
| 1e+12           | -0.3121          | -0.26865         | -0.2439          | 0.031693         | -0.2909           | -0.2451           | -0.2058           | 0.035045          | 0.0077    | 0.02355    | 0.0381    | 0.012672  |
| 5e+12           | -0.2734          | -0.23228         | -0.1985          | 0.030884         | -0.0612           | -0.055575         | -0.0481           | 0.0060124         | 0.1373    | 0.1767     | 0.2138    | 0.031409  |
| 1e+13           | -0.274           | -0.26025         | -0.2502          | 0.010882         | 0.0541            | 0.09185           | 0.1423            | 0.038159          | 0.3043    | 0.3521     | 0.4061    | 0.045779  |



Test Results (Lower Limit = -1.5, Upper Limit = 1.5 (PCT))

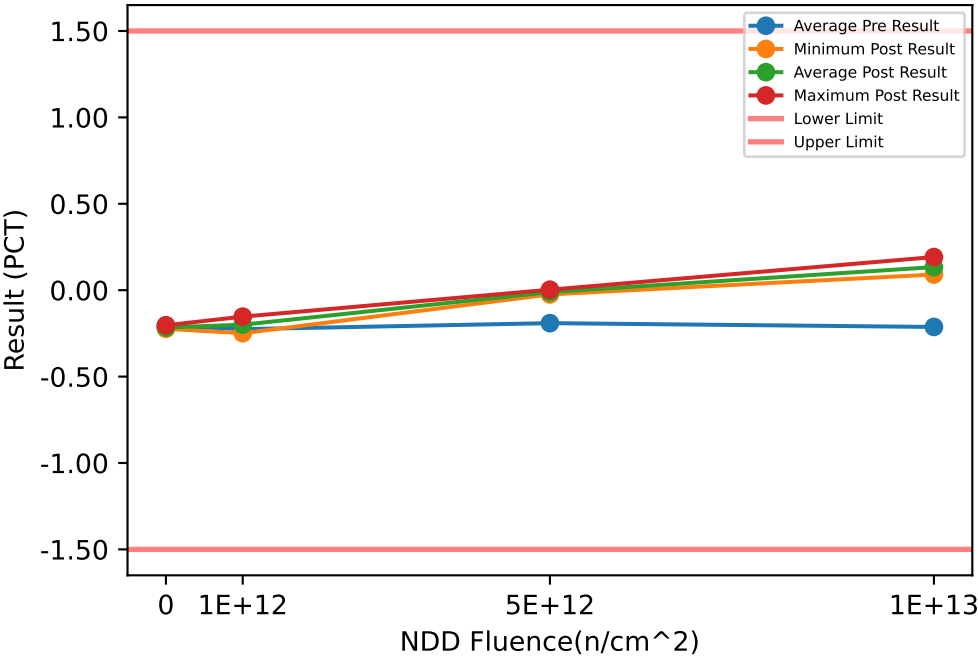
| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 0.1015     | 0.0912      | -0.0103 |
| 2        | 0               | CU2                 | 0.1254     | 0.1194      | -0.006  |
| 3        | 0               | CU3                 | 0.067      | 0.0645      | -0.0025 |
| 60       | 1e+12           | 1E12n/cm2           | 0.071      | 0.1159      | 0.0449  |
| 61       | 1e+12           | 1E12n/cm2           | 0.012      | 0.0454      | 0.0334  |
| 62       | 1e+12           | 1E12n/cm2           | 0.0793     | 0.0921      | 0.0128  |
| 63       | 1e+12           | 1E12n/cm2           | 0.0394     | 0.0703      | 0.0309  |
| 64       | 5e+12           | 5E12n/cm2           | 0.1326     | 0.28        | 0.1474  |
| 65       | 5e+12           | 5E12n/cm2           | 0.0893     | 0.2842      | 0.1949  |
| 66       | 5e+12           | 5E12n/cm2           | 0.0907     | 0.2692      | 0.1785  |
| 67       | 5e+12           | 5E12n/cm2           | 0.06       | 0.2843      | 0.2243  |
| 68       | 1e+13           | 1E13n/cm2           | 0.0625     | 0.3763      | 0.3138  |
| 69       | 1e+13           | 1E13n/cm2           | 0.0556     | 0.4683      | 0.4127  |
| 70       | 1e+13           | 1E13n/cm2           | 0.0453     | 0.4252      | 0.3799  |
| 71       | 1e+13           | 1E13n/cm2           | 0.0832     | 0.4138      | 0.3306  |

Test Statistics (PCT)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta  | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|------------|-----------|-----------|
| 0               | 0.067            | 0.097967         | 0.1254           | 0.02936          | 0.0645            | 0.0917            | 0.1194            | 0.027453          | -0.0103   | -0.0062667 | -0.0025   | 0.0039068 |
| 1e+12           | 0.012            | 0.050425         | 0.0793           | 0.03085          | 0.0454            | 0.080925          | 0.1159            | 0.030128          | 0.0128    | 0.0305     | 0.0449    | 0.013282  |
| 5e+12           | 0.06             | 0.09315          | 0.1326           | 0.029867         | 0.2692            | 0.27943           | 0.2843            | 0.0071051         | 0.1474    | 0.18627    | 0.2243    | 0.032104  |
| 1e+13           | 0.0453           | 0.06165          | 0.0832           | 0.016011         | 0.3763            | 0.4209            | 0.4683            | 0.037881          | 0.3138    | 0.35925    | 0.4127    | 0.04535   |

Device Test: 50.3 ACCURACY|//VOUT/1N8V/10mA/5/@ACC\_VIN\_5P0\_VOUT\_1N8\_10MA

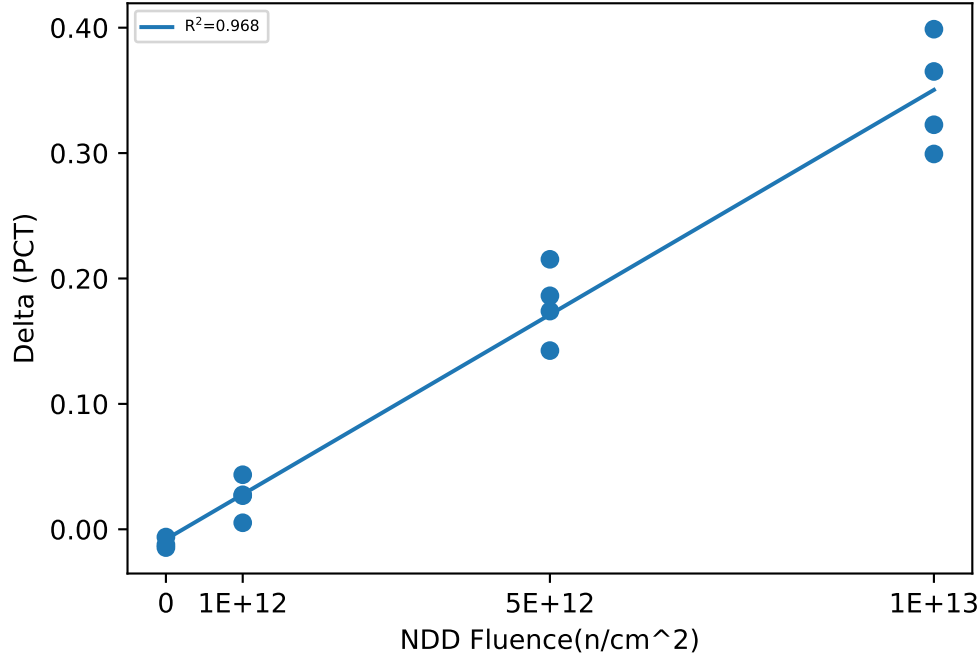
NDD vs Result Stats



Test Results (Lower Limit = -1.5, Upper Limit = 1.5 (PCT))

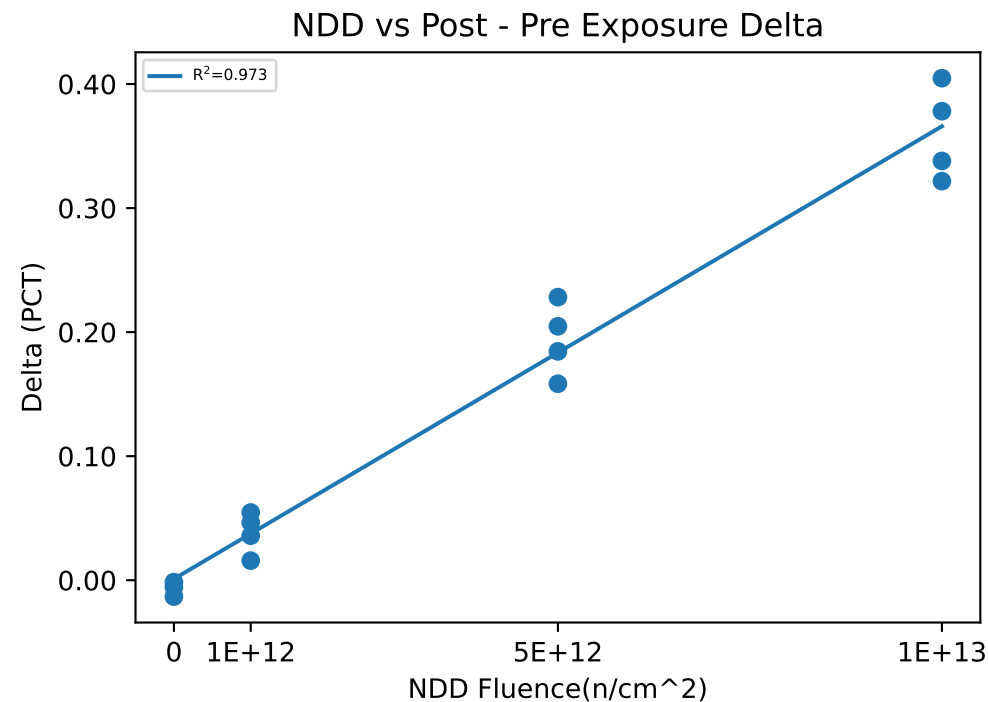
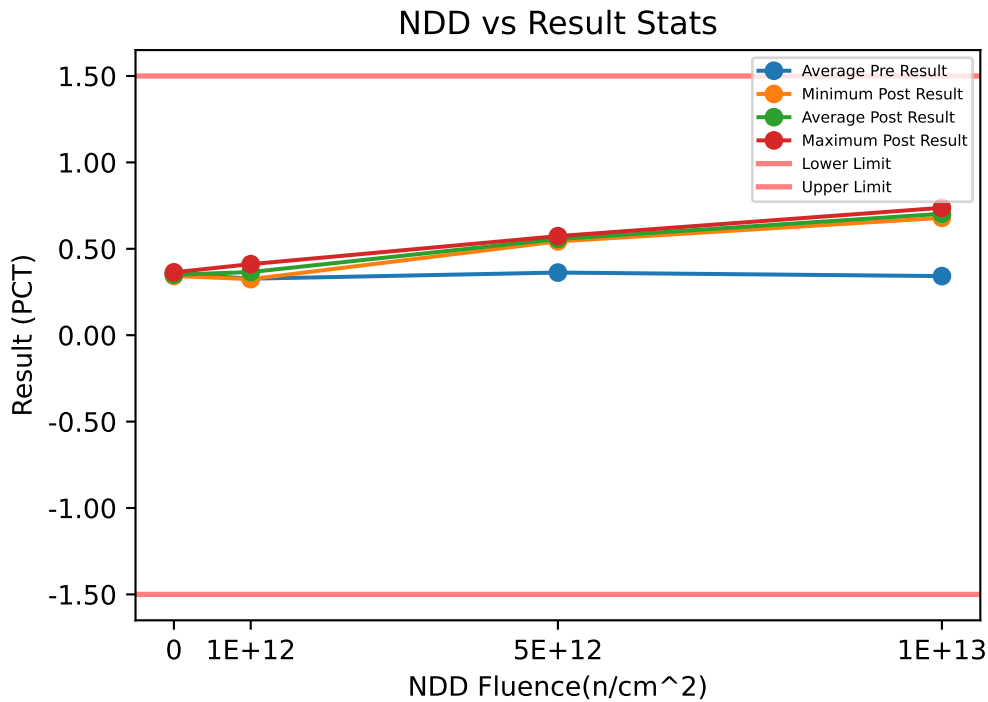
| Serial # | Fluence( $\text{n/cm}^2$ ) | Exposure Conditions       | Pre Result | Post Result | Delta   |
|----------|----------------------------|---------------------------|------------|-------------|---------|
| 1        | 0                          | CU1                       | -0.2062    | -0.2208     | -0.0146 |
| 2        | 0                          | CU2                       | -0.1908    | -0.2031     | -0.0123 |
| 3        | 0                          | CU3                       | -0.2171    | -0.2233     | -0.0062 |
| 60       | $1\text{e}+12$             | $1\text{E}12\text{n/cm}2$ | -0.1965    | -0.153      | 0.0435  |
| 61       | $1\text{e}+12$             | $1\text{E}12\text{n/cm}2$ | -0.2757    | -0.2489     | 0.0268  |
| 62       | $1\text{e}+12$             | $1\text{E}12\text{n/cm}2$ | -0.1986    | -0.1934     | 0.0052  |
| 63       | $1\text{e}+12$             | $1\text{E}12\text{n/cm}2$ | -0.2308    | -0.2033     | 0.0275  |
| 64       | $5\text{e}+12$             | $5\text{E}12\text{n/cm}2$ | -0.1654    | -0.0229     | 0.1425  |
| 65       | $5\text{e}+12$             | $5\text{E}12\text{n/cm}2$ | -0.1866    | -0.0004     | 0.1862  |
| 66       | $5\text{e}+12$             | $5\text{E}12\text{n/cm}2$ | -0.1711    | 0.0029      | 0.174   |
| 67       | $5\text{e}+12$             | $5\text{E}12\text{n/cm}2$ | -0.2396    | -0.0243     | 0.2153  |
| 68       | $1\text{e}+13$             | $1\text{E}13\text{n/cm}2$ | -0.2086    | 0.0907      | 0.2993  |
| 69       | $1\text{e}+13$             | $1\text{E}13\text{n/cm}2$ | -0.2069    | 0.1919      | 0.3988  |
| 70       | $1\text{e}+13$             | $1\text{E}13\text{n/cm}2$ | -0.2334    | 0.1317      | 0.3651  |
| 71       | $1\text{e}+13$             | $1\text{E}13\text{n/cm}2$ | -0.2018    | 0.1208      | 0.3226  |

NDD vs Post - Pre Exposure Delta



Test Statistics (PCT)

| Fluence( $\text{n/cm}^2$ ) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|----------------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0                          | -0.2171          | -0.2047          | -0.1908          | 0.013214         | -0.2233           | -0.21573          | -0.2031           | 0.011012          | -0.0146   | -0.011033 | -0.0062   | 0.0043409 |
| $1\text{e}+12$             | -0.2757          | -0.2254          | -0.1965          | 0.037026         | -0.2489           | -0.19965          | -0.153            | 0.039388          | 0.0052    | 0.02575   | 0.0435    | 0.015722  |
| $5\text{e}+12$             | -0.2396          | -0.19068         | -0.1654          | 0.033824         | -0.0243           | -0.011175         | 0.0029            | 0.014422          | 0.1425    | 0.1795    | 0.2153    | 0.030143  |
| $1\text{e}+13$             | -0.2334          | -0.21268         | -0.2018          | 0.014116         | 0.0907            | 0.13378           | 0.1919            | 0.042452          | 0.2993    | 0.34645   | 0.3988    | 0.044273  |

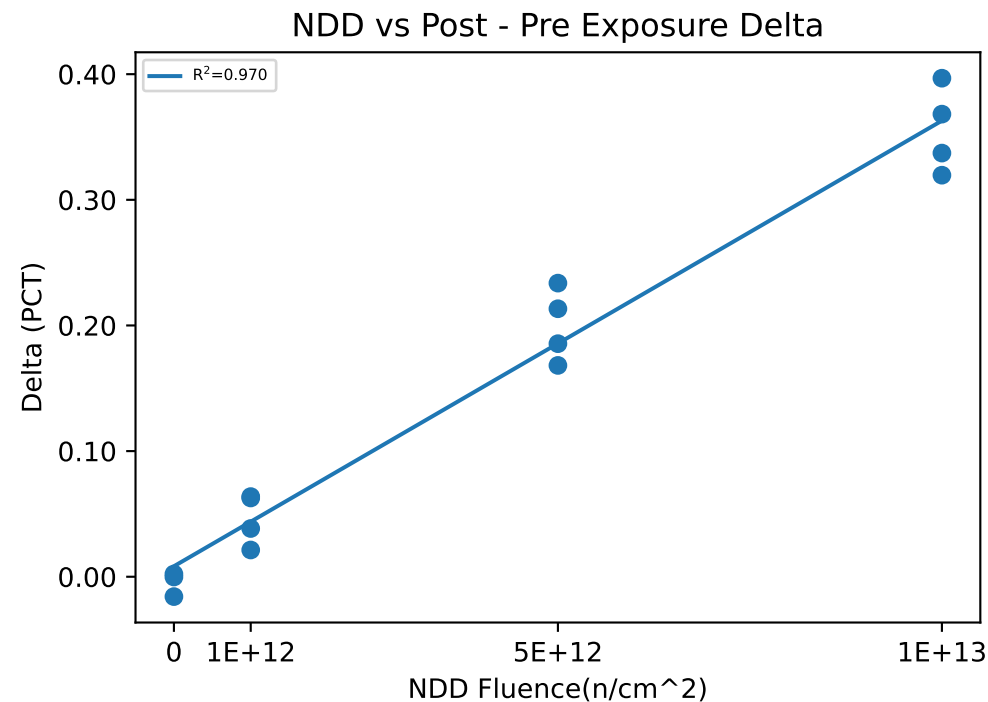
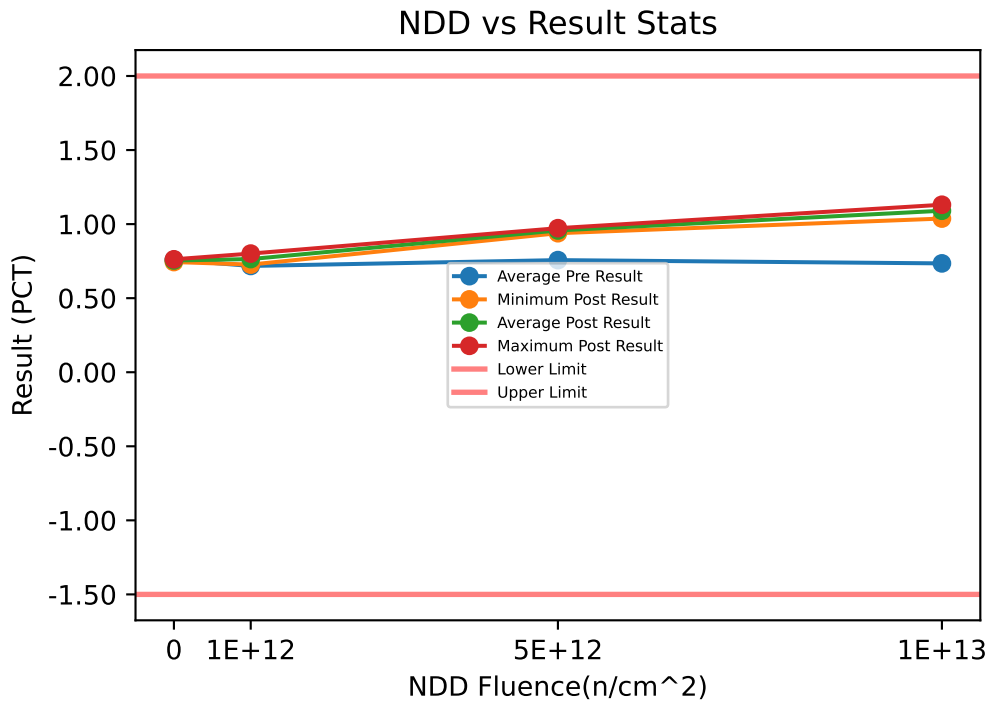


Test Results (Lower Limit = -1.5, Upper Limit = 1.5 (PCT))

| Serial # | Fluence(n/cm <sup>2</sup> ) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------------------|---------------------|------------|-------------|---------|
| 1        | 0                           | CU1                 | 0.3574     | 0.3442      | -0.0132 |
| 2        | 0                           | CU2                 | 0.3694     | 0.3639      | -0.0055 |
| 3        | 0                           | CU3                 | 0.3442     | 0.3427      | -0.0015 |
| 60       | 1e+12                       | 1E12n/cm2           | 0.3565     | 0.4111      | 0.0546  |
| 61       | 1e+12                       | 1E12n/cm2           | 0.278      | 0.3245      | 0.0465  |
| 62       | 1e+12                       | 1E12n/cm2           | 0.3486     | 0.3644      | 0.0158  |
| 63       | 1e+12                       | 1E12n/cm2           | 0.3252     | 0.3611      | 0.0359  |
| 64       | 5e+12                       | 5E12n/cm2           | 0.3844     | 0.5428      | 0.1584  |
| 65       | 5e+12                       | 5E12n/cm2           | 0.3686     | 0.5733      | 0.2047  |
| 66       | 5e+12                       | 5E12n/cm2           | 0.3711     | 0.5556      | 0.1845  |
| 67       | 5e+12                       | 5E12n/cm2           | 0.3258     | 0.554       | 0.2282  |
| 68       | 1e+13                       | 1E13n/cm2           | 0.3574     | 0.6791      | 0.3217  |
| 69       | 1e+13                       | 1E13n/cm2           | 0.3325     | 0.7372      | 0.4047  |
| 70       | 1e+13                       | 1E13n/cm2           | 0.3109     | 0.689       | 0.3781  |
| 71       | 1e+13                       | 1E13n/cm2           | 0.3675     | 0.7055      | 0.338   |

Test Statistics (PCT)

| Fluence(n/cm <sup>2</sup> ) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta  | Max Delta | Std Delta |
|-----------------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|------------|-----------|-----------|
| 0                           | 0.3442           | 0.357            | 0.3694           | 0.012605         | 0.3427            | 0.35027           | 0.3639            | 0.011831          | -0.0132   | -0.0067333 | -0.0015   | 0.0059467 |
| 1e+12                       | 0.278            | 0.32708          | 0.3565           | 0.035313         | 0.3245            | 0.36527           | 0.4111            | 0.0355            | 0.0158    | 0.0382     | 0.0546    | 0.016782  |
| 5e+12                       | 0.3258           | 0.36247          | 0.3844           | 0.025414         | 0.5428            | 0.55642           | 0.5733            | 0.012609          | 0.1584    | 0.19395    | 0.2282    | 0.029675  |
| 1e+13                       | 0.3109           | 0.34208          | 0.3675           | 0.025461         | 0.6791            | 0.7027            | 0.7372            | 0.025448          | 0.3217    | 0.36063    | 0.4047    | 0.037749  |

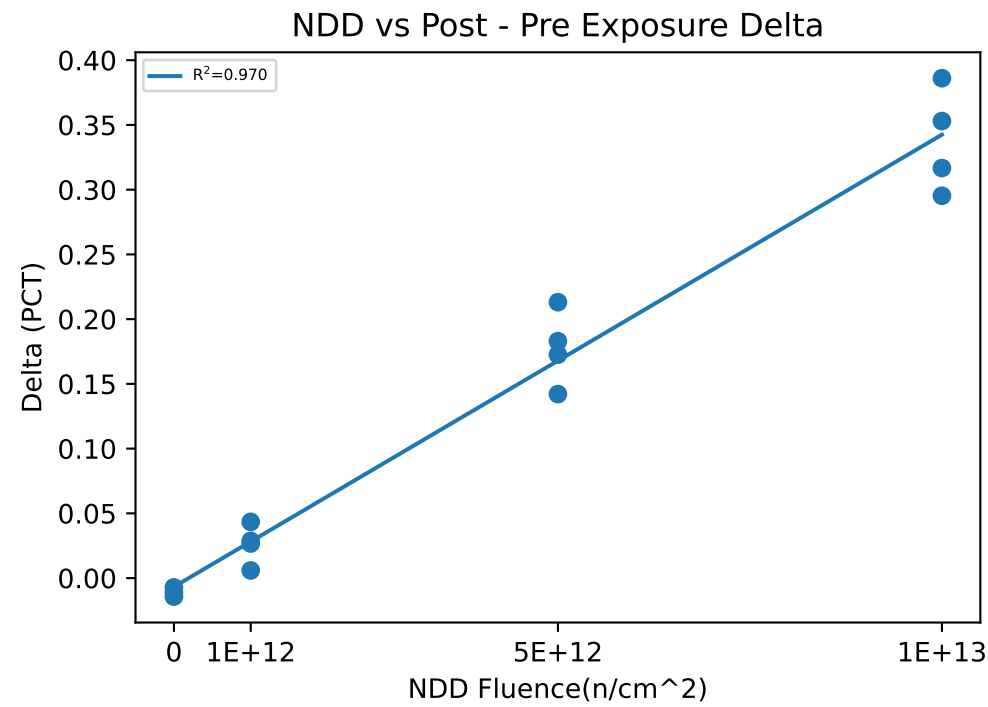
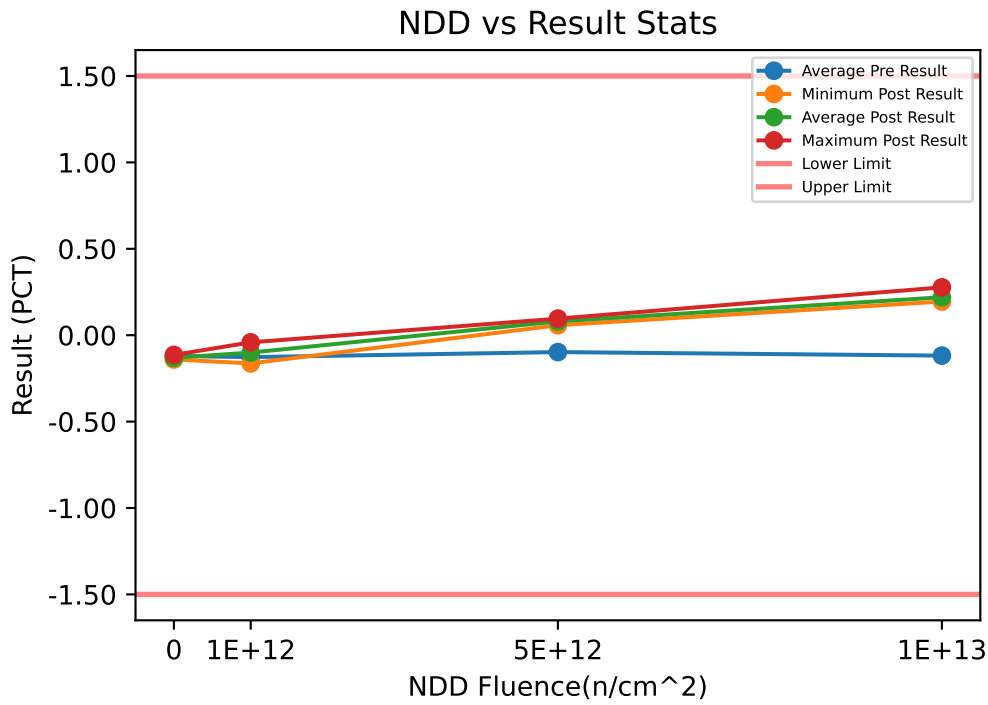


Test Results (Lower Limit = -1.5, Upper Limit = 2.0 (PCT))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 0.7782     | 0.7624      | -0.0158 |
| 2        | 0               | CU2                 | 0.7569     | 0.7567      | -0.0002 |
| 3        | 0               | CU3                 | 0.7417     | 0.7439      | 0.0022  |
| 60       | 1e+12           | 1E12n/cm2           | 0.7372     | 0.801       | 0.0638  |
| 61       | 1e+12           | 1E12n/cm2           | 0.6641     | 0.7268      | 0.0627  |
| 62       | 1e+12           | 1E12n/cm2           | 0.7606     | 0.7819      | 0.0213  |
| 63       | 1e+12           | 1E12n/cm2           | 0.708      | 0.7464      | 0.0384  |
| 64       | 5e+12           | 5E12n/cm2           | 0.7819     | 0.9501      | 0.1682  |
| 65       | 5e+12           | 5E12n/cm2           | 0.7592     | 0.9725      | 0.2133  |
| 66       | 5e+12           | 5E12n/cm2           | 0.7531     | 0.9386      | 0.1855  |
| 67       | 5e+12           | 5E12n/cm2           | 0.7336     | 0.9673      | 0.2337  |
| 68       | 1e+13           | 1E13n/cm2           | 0.7179     | 1.0375      | 0.3196  |
| 69       | 1e+13           | 1E13n/cm2           | 0.7217     | 1.1185      | 0.3968  |
| 70       | 1e+13           | 1E13n/cm2           | 0.7064     | 1.0746      | 0.3682  |
| 71       | 1e+13           | 1E13n/cm2           | 0.7935     | 1.1307      | 0.3372  |

Test Statistics (PCT)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 0.7417           | 0.75893          | 0.7782           | 0.018335         | 0.7439            | 0.75433           | 0.7624            | 0.0094744         | -0.0158   | -0.0046   | 0.0022    | 0.0097734 |
| 1e+12           | 0.6641           | 0.71747          | 0.7606           | 0.041583         | 0.7268            | 0.76403           | 0.801             | 0.033581          | 0.0213    | 0.04655   | 0.0638    | 0.020513  |
| 5e+12           | 0.7336           | 0.75695          | 0.7819           | 0.019896         | 0.9386            | 0.95713           | 0.9725            | 0.015625          | 0.1682    | 0.20017   | 0.2337    | 0.029063  |
| 1e+13           | 0.7064           | 0.73487          | 0.7935           | 0.039621         | 1.0375            | 1.0903            | 1.1307            | 0.042668          | 0.3196    | 0.35545   | 0.3968    | 0.034111  |

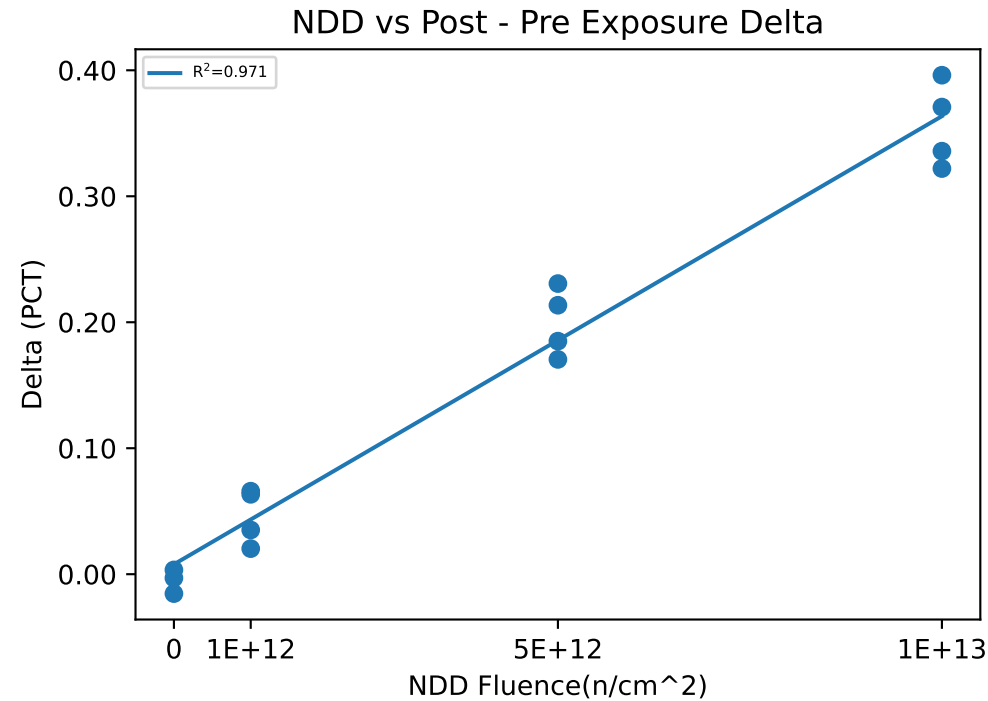
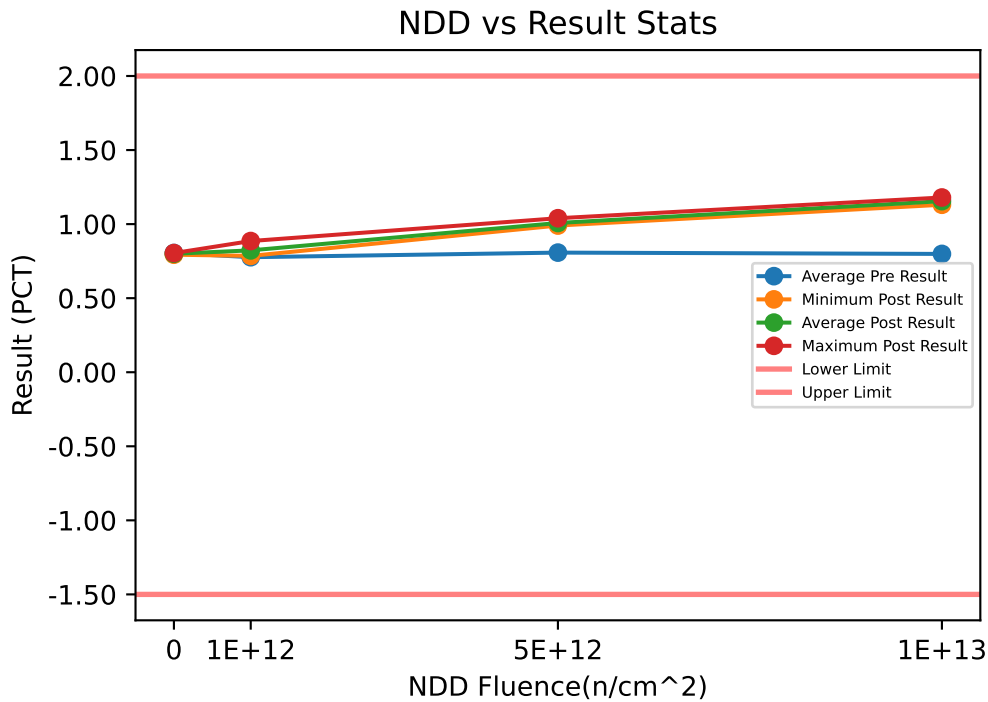


Test Results (Lower Limit = -1.5,  
Upper Limit = 1.5 (PCT))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | -0.1236    | -0.1379     | -0.0143 |
| 2        | 0               | CU2                 | -0.103     | -0.1141     | -0.0111 |
| 3        | 0               | CU3                 | -0.1332    | -0.1404     | -0.0072 |
| 60       | 1e+12           | 1E12n/cm2           | -0.0848    | -0.0414     | 0.0434  |
| 61       | 1e+12           | 1E12n/cm2           | -0.1919    | -0.1632     | 0.0287  |
| 62       | 1e+12           | 1E12n/cm2           | -0.1025    | -0.0966     | 0.0059  |
| 63       | 1e+12           | 1E12n/cm2           | -0.1282    | -0.1015     | 0.0267  |
| 64       | 5e+12           | 5E12n/cm2           | -0.0664    | 0.0757      | 0.1421  |
| 65       | 5e+12           | 5E12n/cm2           | -0.0927    | 0.0903      | 0.183   |
| 66       | 5e+12           | 5E12n/cm2           | -0.0767    | 0.0959      | 0.1726  |
| 67       | 5e+12           | 5E12n/cm2           | -0.1554    | 0.0577      | 0.2131  |
| 68       | 1e+13           | 1E13n/cm2           | -0.1004    | 0.1949      | 0.2953  |
| 69       | 1e+13           | 1E13n/cm2           | -0.1093    | 0.2768      | 0.3861  |
| 70       | 1e+13           | 1E13n/cm2           | -0.1454    | 0.2076      | 0.353   |
| 71       | 1e+13           | 1E13n/cm2           | -0.1177    | 0.199       | 0.3167  |

Test Statistics (PCT)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | -0.1332          | -0.11993         | -0.103           | 0.01543          | -0.1404           | -0.1308           | -0.1141           | 0.014517          | -0.0143   | -0.010867 | -0.0072   | 0.0035557 |
| 1e+12           | -0.1919          | -0.12685         | -0.0848          | 0.046884         | -0.1632           | -0.10068          | -0.0414           | 0.0498            | 0.0059    | 0.026175  | 0.0434    | 0.015432  |
| 5e+12           | -0.1554          | -0.0978          | -0.0664          | 0.039895         | 0.0577            | 0.0799            | 0.0959            | 0.017075          | 0.1421    | 0.1777    | 0.2131    | 0.029295  |
| 1e+13           | -0.1454          | -0.1182          | -0.1004          | 0.019461         | 0.1949            | 0.21958           | 0.2768            | 0.038515          | 0.2953    | 0.33777   | 0.3861    | 0.040064  |



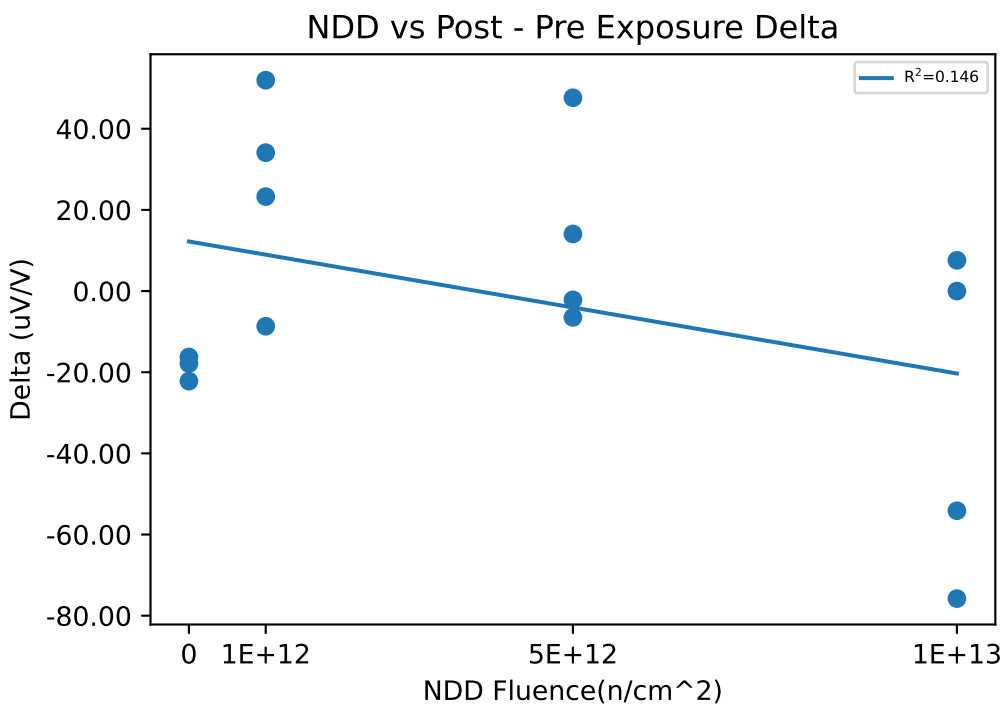
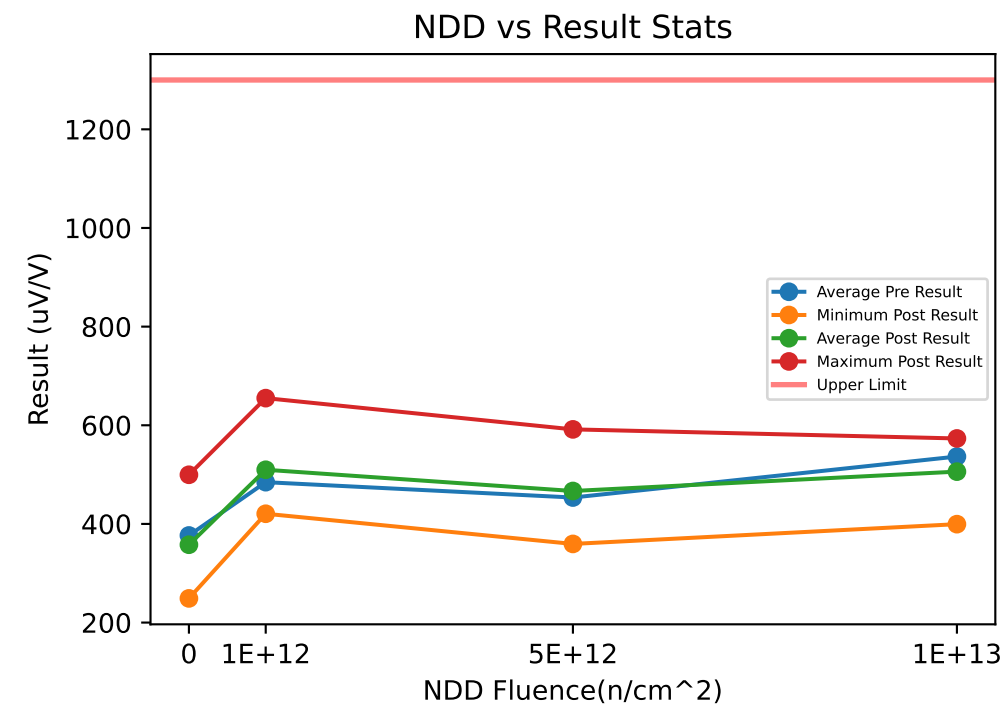
Test Results (Lower Limit = -1.5, Upper Limit = 2.0 (PCT))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 0.8088     | 0.7934      | -0.0154 |
| 2        | 0               | CU2                 | 0.8047     | 0.8017      | -0.003  |
| 3        | 0               | CU3                 | 0.801      | 0.8044      | 0.0034  |
| 60       | 1e+12           | 1E12n/cm2           | 0.8198     | 0.8857      | 0.0659  |
| 61       | 1e+12           | 1E12n/cm2           | 0.7221     | 0.7855      | 0.0634  |
| 62       | 1e+12           | 1E12n/cm2           | 0.7925     | 0.8128      | 0.0203  |
| 63       | 1e+12           | 1E12n/cm2           | 0.7717     | 0.8068      | 0.0351  |
| 64       | 5e+12           | 5E12n/cm2           | 0.8343     | 1.0048      | 0.1705  |
| 65       | 5e+12           | 5E12n/cm2           | 0.8262     | 1.0397      | 0.2135  |
| 66       | 5e+12           | 5E12n/cm2           | 0.8053     | 0.9903      | 0.185   |
| 67       | 5e+12           | 5E12n/cm2           | 0.7647     | 0.9954      | 0.2307  |
| 68       | 1e+13           | 1E13n/cm2           | 0.8087     | 1.1307      | 0.322   |
| 69       | 1e+13           | 1E13n/cm2           | 0.7818     | 1.1779      | 0.3961  |
| 70       | 1e+13           | 1E13n/cm2           | 0.7607     | 1.1315      | 0.3708  |
| 71       | 1e+13           | 1E13n/cm2           | 0.8439     | 1.1797      | 0.3358  |

Test Statistics (PCT)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 0.801            | 0.80483          | 0.8088           | 0.0039017        | 0.7934            | 0.79983           | 0.8044            | 0.0057327         | -0.0154   | -0.005    | 0.0034    | 0.0095582 |
| 1e+12           | 0.7221           | 0.77653          | 0.8198           | 0.041285         | 0.7855            | 0.8227            | 0.8857            | 0.043603          | 0.0203    | 0.046175  | 0.0659    | 0.022196  |
| 5e+12           | 0.7647           | 0.80763          | 0.8343           | 0.031116         | 0.9903            | 1.0075            | 1.0397            | 0.022259          | 0.1705    | 0.19992   | 0.2307    | 0.027203  |
| 1e+13           | 0.7607           | 0.79878          | 0.8439           | 0.035929         | 1.1307            | 1.1549            | 1.1797            | 0.027551          | 0.322     | 0.35618   | 0.3961    | 0.03362   |

Device Test: 55.1 ACCURACY|//LINE\_REGULATION\_DN/1N8V/150mA//@LINE\_REG

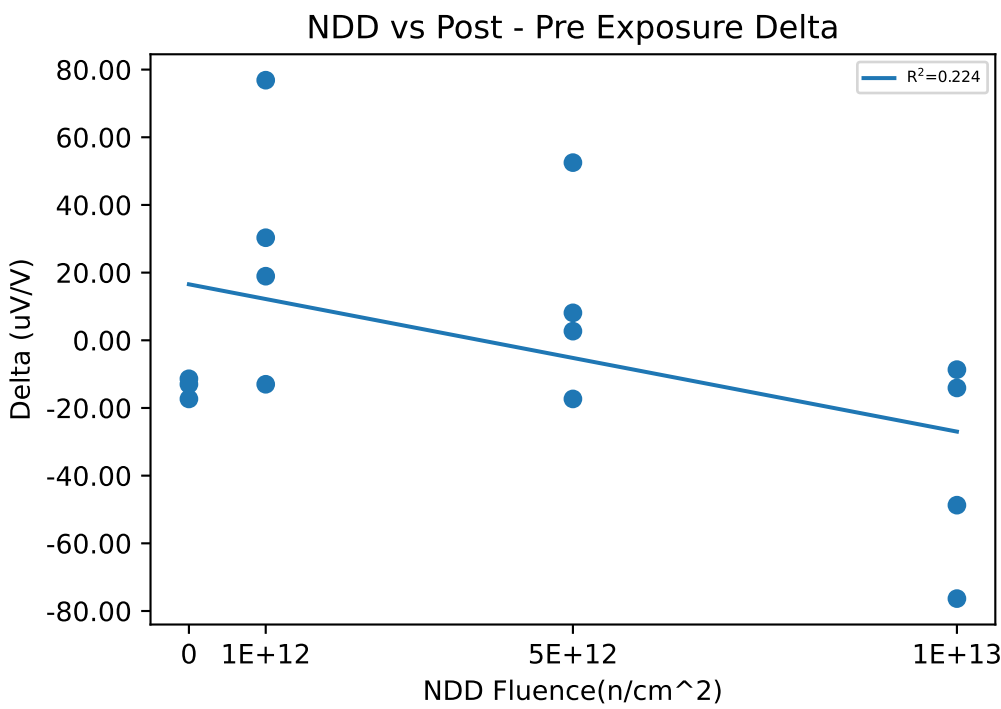
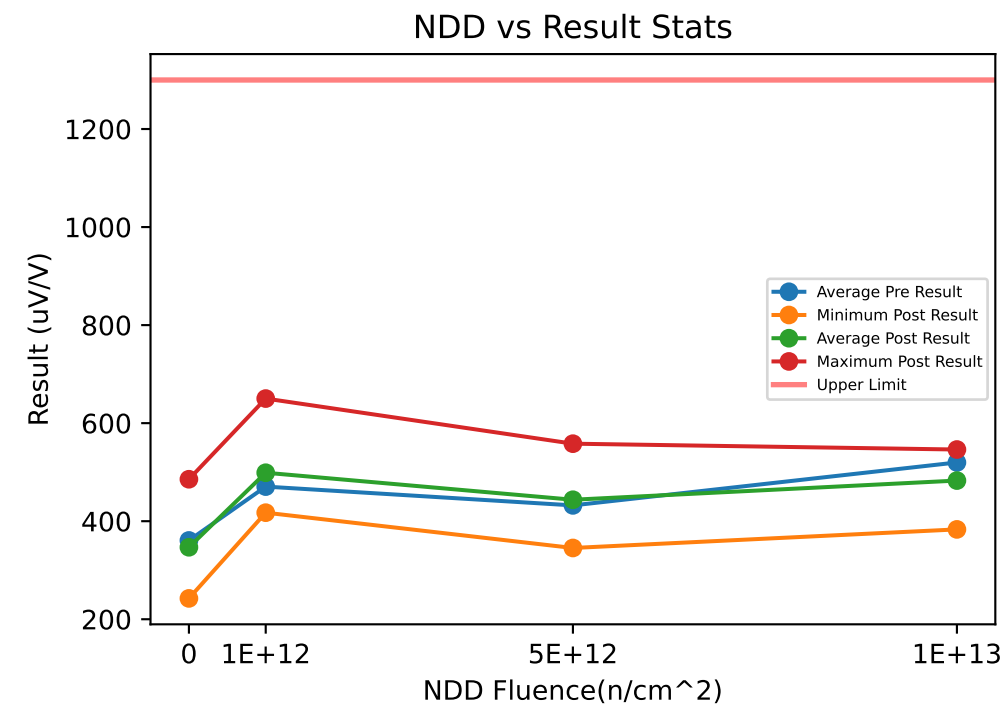


Test Results (Upper Limit = 1300.0 (uV/V))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 266.88     | 249.02      | -17.867 |
| 2        | 0               | CU2                 | 347        | 324.8       | -22.198 |
| 3        | 0               | CU3                 | 515.9      | 499.66      | -16.245 |
| 60       | 1e+12           | 1E12n/cm2           | 603.06     | 655.02      | 51.963  |
| 61       | 1e+12           | 1E12n/cm2           | 397.35     | 420.62      | 23.274  |
| 62       | 1e+12           | 1E12n/cm2           | 443.9      | 435.24      | -8.6653 |
| 63       | 1e+12           | 1E12n/cm2           | 494.25     | 528.35      | 34.1    |
| 64       | 5e+12           | 5E12n/cm2           | 344.84     | 392.47      | 47.635  |
| 65       | 5e+12           | 5E12n/cm2           | 529.98     | 523.47      | -6.5007 |
| 66       | 5e+12           | 5E12n/cm2           | 577.61     | 591.68      | 14.07   |
| 67       | 5e+12           | 5E12n/cm2           | 361.62     | 359.45      | -2.1685 |
| 68       | 1e+13           | 1E13n/cm2           | 565.7      | 573.28      | 7.5738  |
| 69       | 1e+13           | 1E13n/cm2           | 576.53     | 522.39      | -54.139 |
| 70       | 1e+13           | 1E13n/cm2           | 475.3      | 399.51      | -75.791 |
| 71       | 1e+13           | 1E13n/cm2           | 528.89     | 528.89      | -0.0046 |

Test Statistics (uV/V)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 266.88           | 376.59           | 515.9            | 127.12           | 249.02            | 357.82            | 499.66            | 128.54            | -22.198   | -18.77    | -16.245   | 3.0777    |
| 1e+12           | 397.35           | 484.64           | 603.06           | 88.307           | 420.62            | 509.81            | 655.02            | 107.93            | -8.6653   | 25.168    | 51.963    | 25.469    |
| 5e+12           | 344.84           | 453.51           | 577.61           | 117.62           | 359.45            | 466.77            | 591.68            | 109.33            | -6.5007   | 13.259    | 47.635    | 24.568    |
| 1e+13           | 475.3            | 536.61           | 576.53           | 45.675           | 399.51            | 506.02            | 573.28            | 74.519            | -75.791   | -30.59    | 7.5738    | 40.783    |



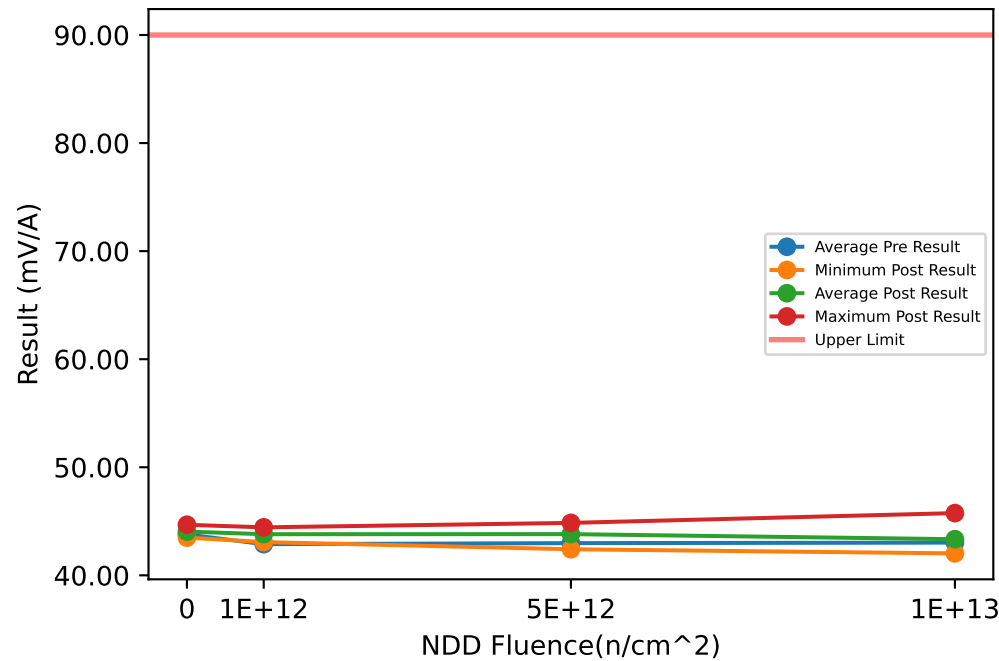
| Test Results (Upper Limit = 1300.0 (uV/V)) |                 |                     |            |             |         |
|--------------------------------------------|-----------------|---------------------|------------|-------------|---------|
| Serial #                                   | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
| 1                                          | 0               | CU1                 | 253.89     | 242.52      | -11.37  |
| 2                                          | 0               | CU2                 | 325.35     | 312.35      | -12.995 |
| 3                                          | 0               | CU3                 | 502.91     | 485.58      | -17.327 |
| 60                                         | 1e+12           | 1E12n/cm2           | 573.28     | 650.15      | 76.865  |
| 61                                         | 1e+12           | 1E12n/cm2           | 387.06     | 417.37      | 30.312  |
| 62                                         | 1e+12           | 1E12n/cm2           | 434.7      | 421.7       | -12.996 |
| 63                                         | 1e+12           | 1E12n/cm2           | 487.21     | 506.15      | 18.943  |
| 64                                         | 5e+12           | 5E12n/cm2           | 323.18     | 375.69      | 52.507  |
| 65                                         | 5e+12           | 5E12n/cm2           | 513.19     | 495.87      | -17.327 |
| 66                                         | 5e+12           | 5E12n/cm2           | 550        | 558.12      | 8.1153  |
| 67                                         | 5e+12           | 5E12n/cm2           | 342.67     | 345.37      | 2.7037  |
| 68                                         | 1e+13           | 1E13n/cm2           | 560.29     | 546.21      | -14.08  |
| 69                                         | 1e+13           | 1E13n/cm2           | 552.17     | 503.44      | -48.725 |
| 70                                         | 1e+13           | 1E13n/cm2           | 459.6      | 383.27      | -76.333 |
| 71                                         | 1e+13           | 1E13n/cm2           | 507.24     | 498.57      | -8.6658 |

Test Statistics (uV/V)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 253.89           | 360.72           | 502.91           | 128.22           | 242.52            | 346.82            | 485.58            | 125.14            | -17.327   | -13.898   | -11.37    | 3.0794    |
| 1e+12           | 387.06           | 470.56           | 573.28           | 79.765           | 417.37            | 498.84            | 650.15            | 108.83            | -12.996   | 28.281    | 76.865    | 37.218    |
| 5e+12           | 323.18           | 432.26           | 550              | 115.96           | 345.37            | 443.76            | 558.12            | 100.18            | -17.327   | 11.5      | 52.507    | 29.447    |
| 1e+13           | 459.6            | 519.82           | 560.29           | 46.437           | 383.27            | 482.87            | 546.21            | 69.768            | -76.333   | -36.951   | -8.6658   | 31.69     |

Device Test: 55.3 ACCURACY|//LOAD\_REGULATION/1N8V//5/@LOAD\_REG\_1302

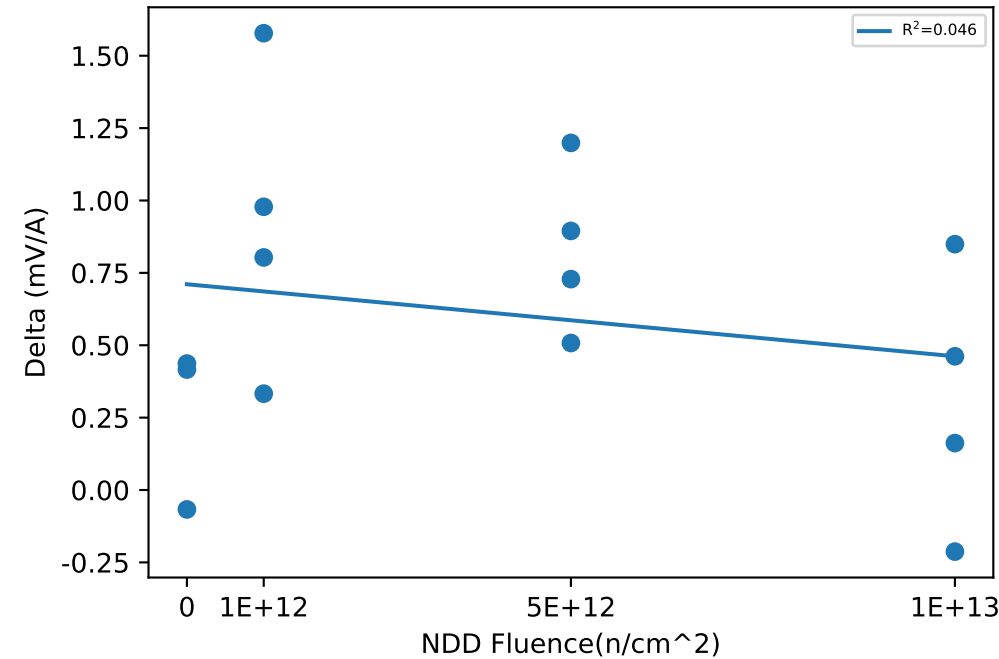
NDD vs Result Stats



Test Results (Upper Limit = 90.0 (mV/A))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 44.744     | 44.677      | -0.067  |
| 2        | 0               | CU2                 | 43.053     | 43.49       | 0.4368  |
| 3        | 0               | CU3                 | 43.557     | 43.973      | 0.4161  |
| 60       | 1e+12           | 1E12n/cm2           | 42.37      | 43.349      | 0.9782  |
| 61       | 1e+12           | 1E12n/cm2           | 42.862     | 44.44       | 1.5778  |
| 62       | 1e+12           | 1E12n/cm2           | 43.557     | 44.361      | 0.8033  |
| 63       | 1e+12           | 1E12n/cm2           | 42.741     | 43.074      | 0.3328  |
| 64       | 5e+12           | 5E12n/cm2           | 43.033     | 43.928      | 0.8949  |
| 65       | 5e+12           | 5E12n/cm2           | 42.854     | 44.053      | 1.1989  |
| 66       | 5e+12           | 5E12n/cm2           | 41.904     | 42.412      | 0.5077  |
| 67       | 5e+12           | 5E12n/cm2           | 44.124     | 44.852      | 0.7284  |
| 68       | 1e+13           | 1E13n/cm2           | 41.983     | 42.832      | 0.8491  |
| 69       | 1e+13           | 1E13n/cm2           | 42.241     | 42.029      | -0.2127 |
| 70       | 1e+13           | 1E13n/cm2           | 42.591     | 42.753      | 0.1621  |
| 71       | 1e+13           | 1E13n/cm2           | 45.294     | 45.756      | 0.4618  |

NDD vs Post - Pre Exposure Delta

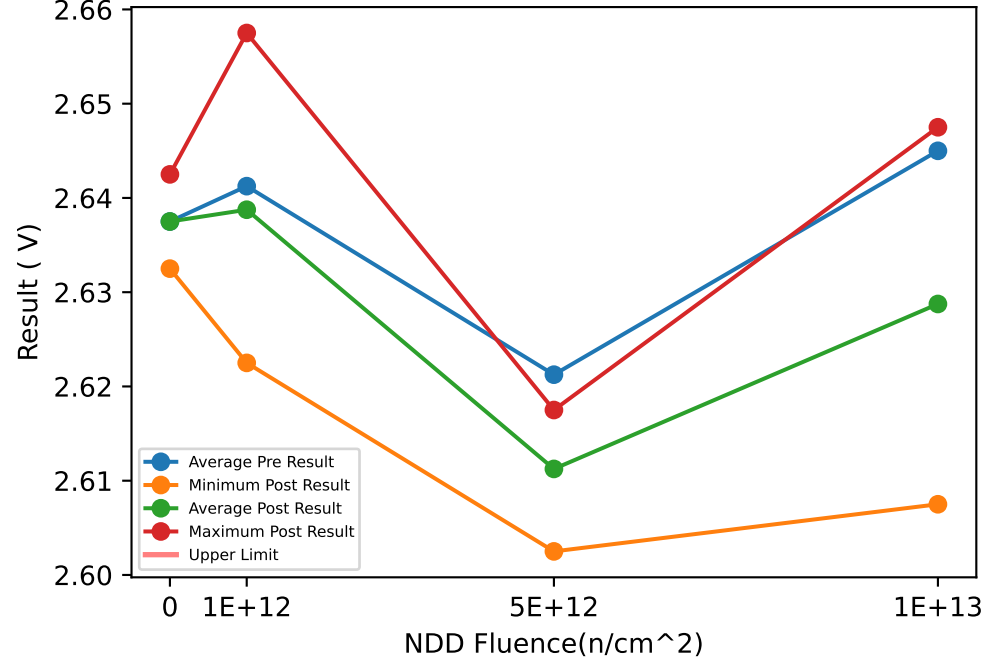


Test Statistics (mV/A)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 43.053           | 43.785           | 44.744           | 0.86799          | 43.49             | 44.047            | 44.677            | 0.59681           | -0.067    | 0.26197   | 0.4368    | 0.28508   |
| 1e+12           | 42.37            | 42.883           | 43.557           | 0.49596          | 43.074            | 43.806            | 44.44             | 0.69624           | 0.3328    | 0.92302   | 1.5778    | 0.51461   |
| 5e+12           | 41.904           | 42.978           | 44.124           | 0.90997          | 42.412            | 43.811            | 44.852            | 1.0187            | 0.5077    | 0.83248   | 1.1989    | 0.29125   |
| 1e+13           | 41.983           | 43.027           | 45.294           | 1.5313           | 42.029            | 43.343            | 45.756            | 1.6489            | -0.2127   | 0.31508   | 0.8491    | 0.45043   |

Device Test: 60.2 UVLO|//RISE////@VUVLO\_RISE

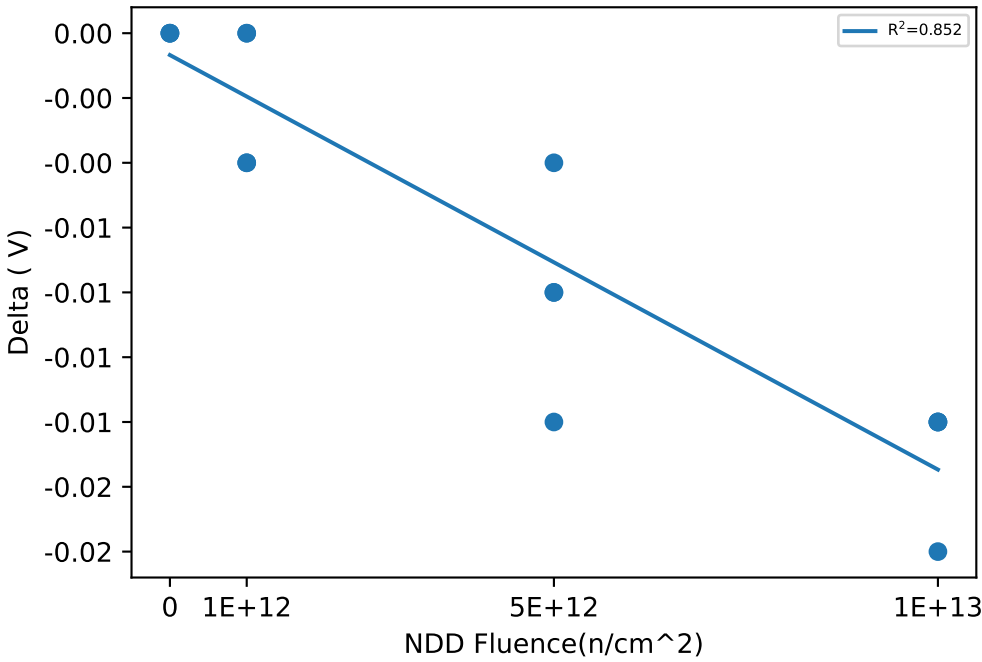
NDD vs Result Stats



Test Results (No Limits Specified ( V))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 2.6375     | 2.6375      | 0      |
| 2        | 0               | CU2                 | 2.6425     | 2.6425      | 0      |
| 3        | 0               | CU3                 | 2.6325     | 2.6325      | 0      |
| 60       | 1e+12           | 1E12n/cm2           | 2.6375     | 2.6375      | 0      |
| 61       | 1e+12           | 1E12n/cm2           | 2.6575     | 2.6575      | 0      |
| 62       | 1e+12           | 1E12n/cm2           | 2.6275     | 2.6225      | -0.005 |
| 63       | 1e+12           | 1E12n/cm2           | 2.6425     | 2.6375      | -0.005 |
| 64       | 5e+12           | 5E12n/cm2           | 2.6075     | 2.6025      | -0.005 |
| 65       | 5e+12           | 5E12n/cm2           | 2.6275     | 2.6175      | -0.01  |
| 66       | 5e+12           | 5E12n/cm2           | 2.6275     | 2.6175      | -0.01  |
| 67       | 5e+12           | 5E12n/cm2           | 2.6225     | 2.6075      | -0.015 |
| 68       | 1e+13           | 1E13n/cm2           | 2.6625     | 2.6475      | -0.015 |
| 69       | 1e+13           | 1E13n/cm2           | 2.6525     | 2.6325      | -0.02  |
| 70       | 1e+13           | 1E13n/cm2           | 2.6225     | 2.6075      | -0.015 |
| 71       | 1e+13           | 1E13n/cm2           | 2.6425     | 2.6275      | -0.015 |

NDD vs Post - Pre Exposure Delta

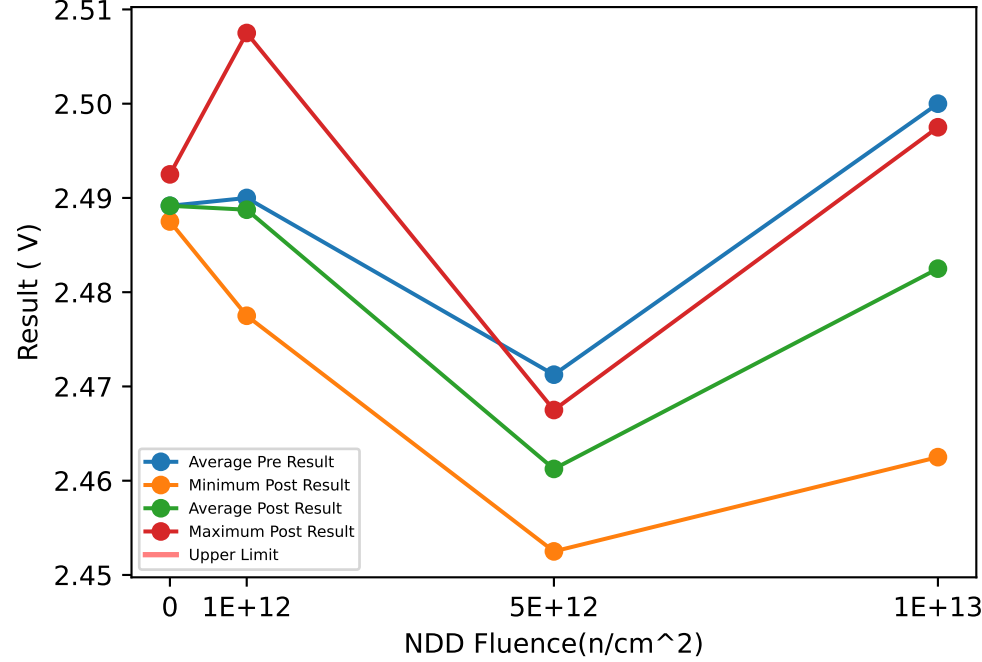


Test Statistics ( V)

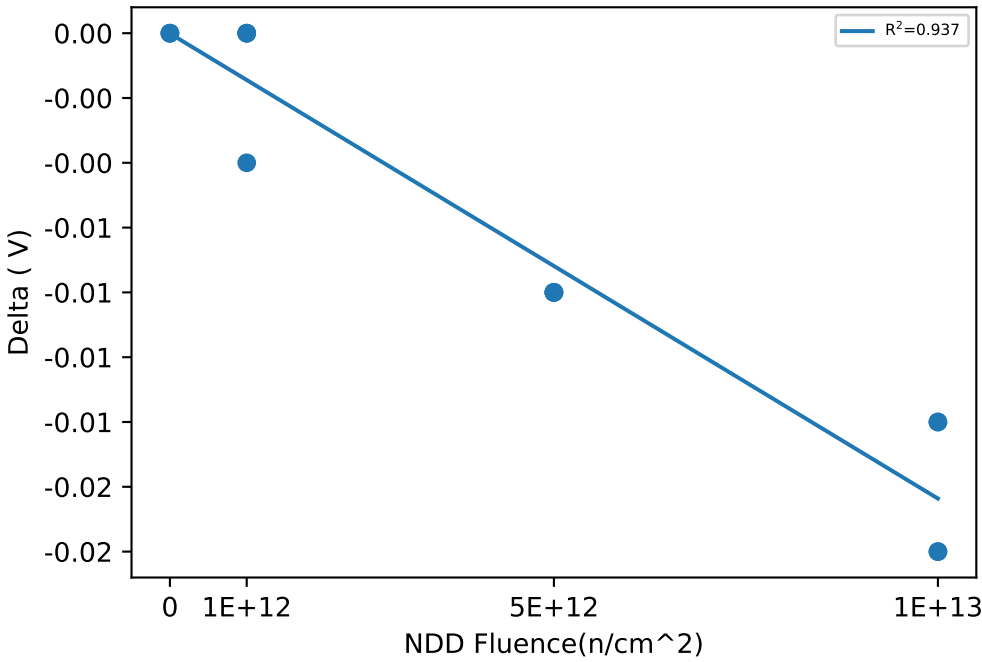
| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 2.6325           | 2.6375           | 2.6425           | 0.005            | 2.6325            | 2.6375            | 2.6425            | 0.005             | 0         | 0         | 0         | 0         |
| 1e+12           | 2.6275           | 2.6413           | 2.6575           | 0.0125           | 2.6225            | 2.6387            | 2.6575            | 0.014361          | -0.005    | -0.0025   | 0         | 0.0028868 |
| 5e+12           | 2.6075           | 2.6212           | 2.6275           | 0.0094648        | 2.6025            | 2.6113            | 2.6175            | 0.0075            | -0.015    | -0.01     | -0.005    | 0.0040825 |
| 1e+13           | 2.6225           | 2.645            | 2.6625           | 0.017078         | 2.6075            | 2.6288            | 2.6475            | 0.01652           | -0.02     | -0.01625  | -0.015    | 0.0025    |

Device Test: 60.3 UVLO|//FALL////@VUVLO\_FALL

NDD vs Result Stats



NDD vs Post - Pre Exposure Delta



Test Results (No Limits Specified ( V))

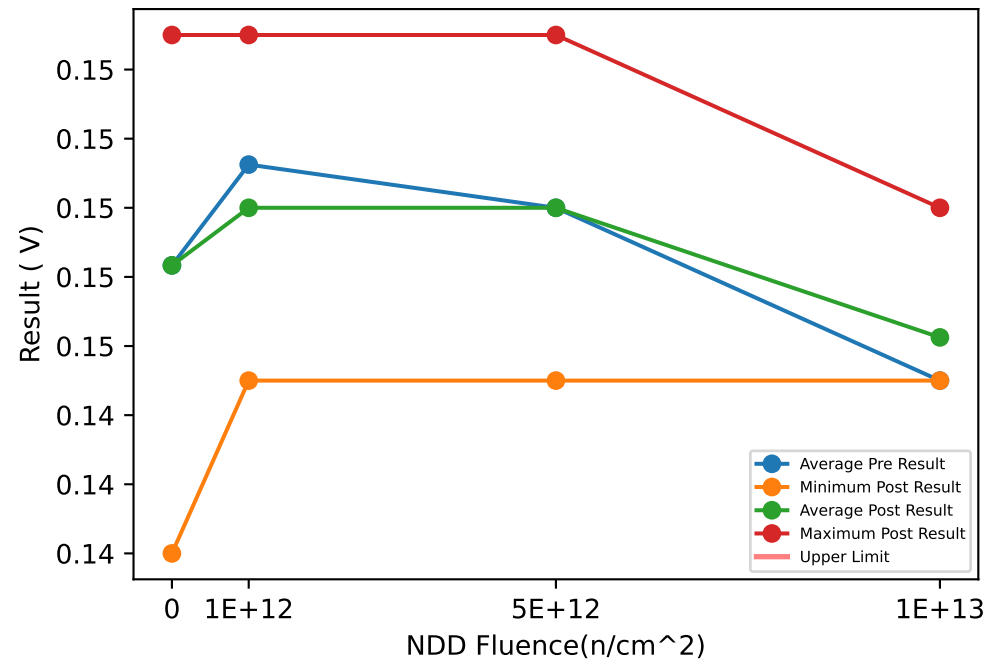
| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 2.4875     | 2.4875      | 0      |
| 2        | 0               | CU2                 | 2.4875     | 2.4875      | 0      |
| 3        | 0               | CU3                 | 2.4925     | 2.4925      | 0      |
| 60       | 1e+12           | 1E12n/cm2           | 2.4825     | 2.4825      | 0      |
| 61       | 1e+12           | 1E12n/cm2           | 2.5075     | 2.5075      | 0      |
| 62       | 1e+12           | 1E12n/cm2           | 2.4825     | 2.4775      | -0.005 |
| 63       | 1e+12           | 1E12n/cm2           | 2.4875     | 2.4875      | 0      |
| 64       | 5e+12           | 5E12n/cm2           | 2.4625     | 2.4525      | -0.01  |
| 65       | 5e+12           | 5E12n/cm2           | 2.4725     | 2.4625      | -0.01  |
| 66       | 5e+12           | 5E12n/cm2           | 2.4775     | 2.4675      | -0.01  |
| 67       | 5e+12           | 5E12n/cm2           | 2.4725     | 2.4625      | -0.01  |
| 68       | 1e+13           | 1E13n/cm2           | 2.5125     | 2.4975      | -0.015 |
| 69       | 1e+13           | 1E13n/cm2           | 2.5075     | 2.4875      | -0.02  |
| 70       | 1e+13           | 1E13n/cm2           | 2.4825     | 2.4625      | -0.02  |
| 71       | 1e+13           | 1E13n/cm2           | 2.4975     | 2.4825      | -0.015 |

Test Statistics ( V)

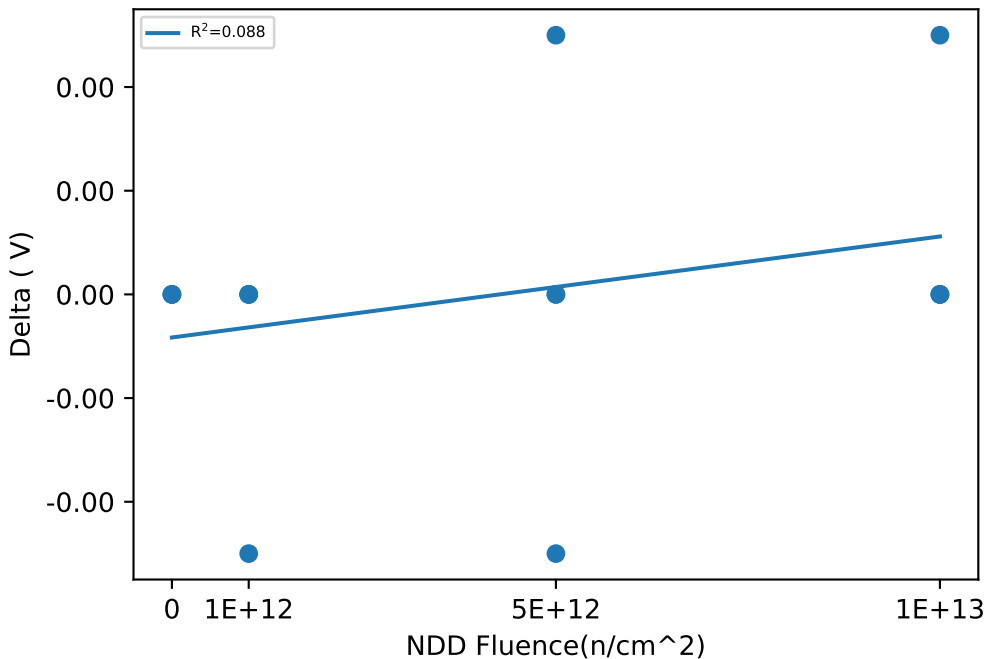
| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 2.4875           | 2.4892           | 2.4925           | 0.0028868        | 2.4875            | 2.4892            | 2.4925            | 0.0028868         | 0         | 0         | 0         | 0         |
| 1e+12           | 2.4825           | 2.49             | 2.5075           | 0.011902         | 2.4775            | 2.4888            | 2.5075            | 0.01315           | -0.005    | -0.00125  | 0         | 0.0025    |
| 5e+12           | 2.4625           | 2.4712           | 2.4775           | 0.0062915        | 2.4525            | 2.4612            | 2.4675            | 0.0062915         | -0.01     | -0.01     | -0.01     | 2.219e-16 |
| 1e+13           | 2.4825           | 2.5              | 2.5125           | 0.013229         | 2.4625            | 2.4825            | 2.4975            | 0.01472           | -0.02     | -0.0175   | -0.015    | 0.0028868 |

Device Test: 60.4 UVLO|//HYSTERESIS|///@VUVLO\_HYS

NDD vs Result Stats



NDD vs Post - Pre Exposure Delta



Test Results (No Limits Specified ( V))

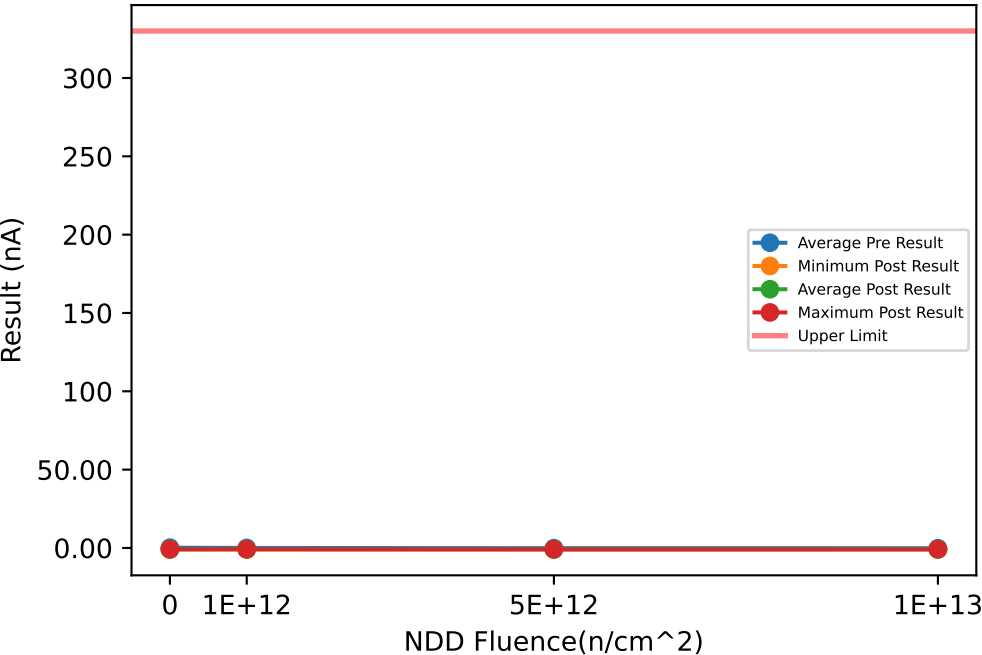
| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 0.15       | 0.15        | 0      |
| 2        | 0               | CU2                 | 0.155      | 0.155       | 0      |
| 3        | 0               | CU3                 | 0.14       | 0.14        | 0      |
| 60       | 1e+12           | 1E12n/cm2           | 0.155      | 0.155       | 0      |
| 61       | 1e+12           | 1E12n/cm2           | 0.15       | 0.15        | 0      |
| 62       | 1e+12           | 1E12n/cm2           | 0.145      | 0.145       | 0      |
| 63       | 1e+12           | 1E12n/cm2           | 0.155      | 0.15        | -0.005 |
| 64       | 5e+12           | 5E12n/cm2           | 0.145      | 0.15        | 0.005  |
| 65       | 5e+12           | 5E12n/cm2           | 0.155      | 0.155       | 0      |
| 66       | 5e+12           | 5E12n/cm2           | 0.15       | 0.15        | 0      |
| 67       | 5e+12           | 5E12n/cm2           | 0.15       | 0.145       | -0.005 |
| 68       | 1e+13           | 1E13n/cm2           | 0.15       | 0.15        | 0      |
| 69       | 1e+13           | 1E13n/cm2           | 0.145      | 0.145       | 0      |
| 70       | 1e+13           | 1E13n/cm2           | 0.14       | 0.145       | 0.005  |
| 71       | 1e+13           | 1E13n/cm2           | 0.145      | 0.145       | 0      |

Test Statistics ( V)

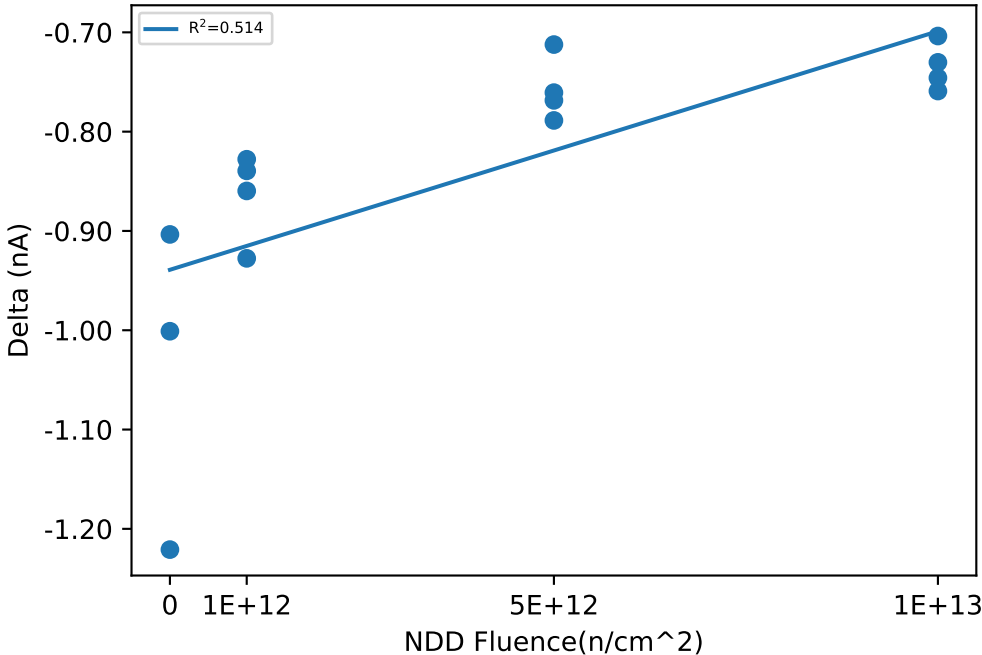
| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 0.14             | 0.14833          | 0.155            | 0.0076376        | 0.14              | 0.14833           | 0.155             | 0.0076376         | 0         | 0         | 0         | 0         |
| 1e+12           | 0.145            | 0.15125          | 0.155            | 0.0047871        | 0.145             | 0.15              | 0.155             | 0.0040825         | -0.005    | -0.00125  | 0         | 0.0025    |
| 5e+12           | 0.145            | 0.15             | 0.155            | 0.0040825        | 0.145             | 0.15              | 0.155             | 0.0040825         | -0.005    | 0         | 0.005     | 0.0040825 |
| 1e+13           | 0.14             | 0.145            | 0.15             | 0.0040825        | 0.145             | 0.14625           | 0.15              | 0.0025            | 0         | 0.00125   | 0.005     | 0.0025    |

Device Test: 65.1 LEAK|/EN/CURRENT///3/@I\_EN\_LKG

NDD vs Result Stats



NDD vs Post - Pre Exposure Delta



Test Results (Upper Limit = 330.0 (nA))

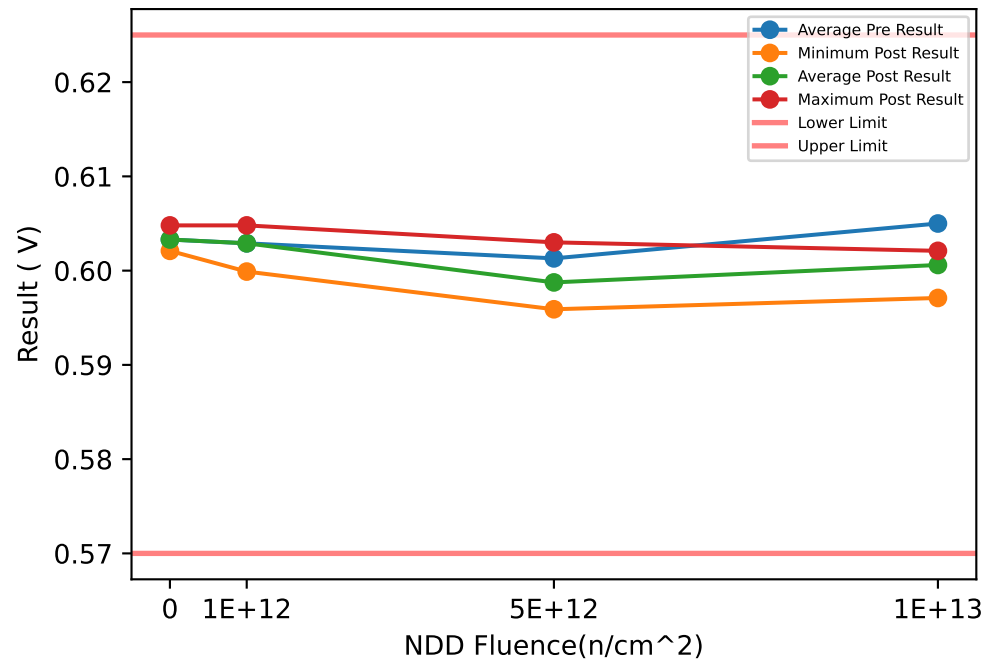
| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 0.3042     | -0.9167     | -1.2209 |
| 2        | 0               | CU2                 | 0.1724     | -0.8286     | -1.001  |
| 3        | 0               | CU3                 | 0.0538     | -0.8497     | -0.9035 |
| 60       | 1e+12           | 1E12n/cm2           | 0.0694     | -0.8582     | -0.9276 |
| 61       | 1e+12           | 1E12n/cm2           | -0.0211    | -0.8489     | -0.8278 |
| 62       | 1e+12           | 1E12n/cm2           | 0.0421     | -0.7974     | -0.8395 |
| 63       | 1e+12           | 1E12n/cm2           | -0.0461    | -0.9058     | -0.8597 |
| 64       | 5e+12           | 5E12n/cm2           | -0.1124    | -0.8731     | -0.7607 |
| 65       | 5e+12           | 5E12n/cm2           | -0.121     | -0.9097     | -0.7887 |
| 66       | 5e+12           | 5E12n/cm2           | -0.1202    | -0.8887     | -0.7685 |
| 67       | 5e+12           | 5E12n/cm2           | -0.1444    | -0.8567     | -0.7123 |
| 68       | 1e+13           | 1E13n/cm2           | -0.1452    | -0.9043     | -0.7591 |
| 69       | 1e+13           | 1E13n/cm2           | -0.1561    | -0.8598     | -0.7037 |
| 70       | 1e+13           | 1E13n/cm2           | -0.1382    | -0.8684     | -0.7302 |
| 71       | 1e+13           | 1E13n/cm2           | -0.1288    | -0.8746     | -0.7458 |

Test Statistics (nA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 0.0538           | 0.1768           | 0.3042           | 0.12526          | -0.9167           | -0.865            | -0.8286           | 0.046             | -1.2209   | -1.0418   | -0.9035   | 0.16259   |
| 1e+12           | -0.0461          | 0.011075         | 0.0694           | 0.053754         | -0.9058           | -0.85257          | -0.7974           | 0.044431          | -0.9276   | -0.86365  | -0.8278   | 0.044623  |
| 5e+12           | -0.1444          | -0.1245          | -0.1124          | 0.013822         | -0.9097           | -0.88205          | -0.8567           | 0.022594          | -0.7887   | -0.75755  | -0.7123   | 0.032392  |
| 1e+13           | -0.1561          | -0.14208         | -0.1288          | 0.011514         | -0.9043           | -0.87677          | -0.8598           | 0.019327          | -0.7591   | -0.7347   | -0.7037   | 0.023804  |

Device Test: 65.2 ENABLE|/EN/RISE///3/@V\_EN\_RISING

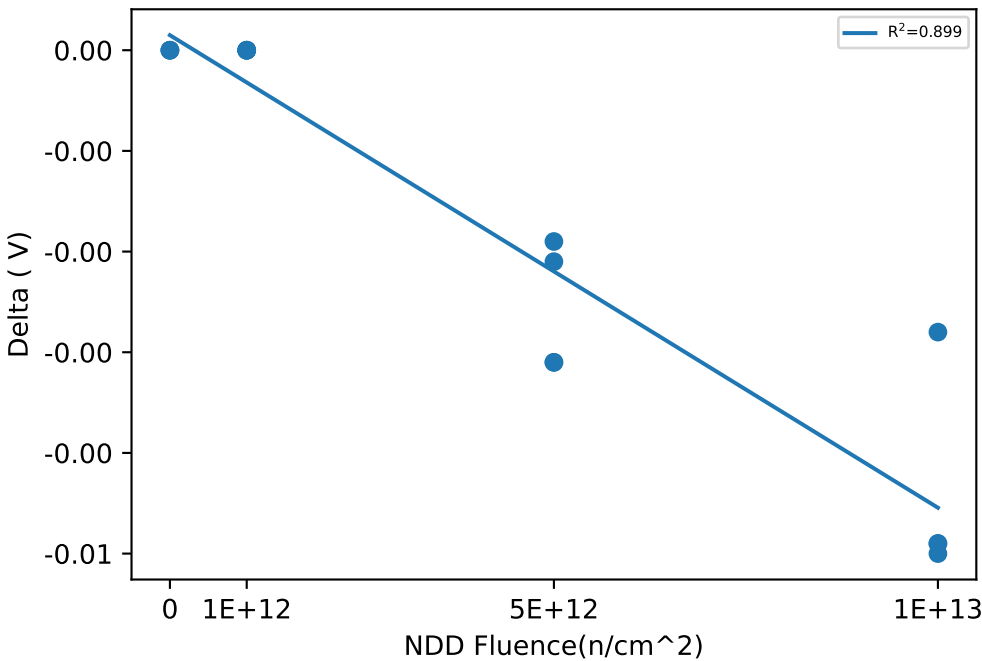
NDD vs Result Stats



Test Results (Lower Limit = 0.57, Upper Limit = 0.625 ( V))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 0.6048     | 0.6048      | 0       |
| 2        | 0               | CU2                 | 0.603      | 0.603       | 0       |
| 3        | 0               | CU3                 | 0.6021     | 0.6021      | 0       |
| 60       | 1e+12           | 1E12n/cm2           | 0.5999     | 0.5999      | 0       |
| 61       | 1e+12           | 1E12n/cm2           | 0.6048     | 0.6048      | 0       |
| 62       | 1e+12           | 1E12n/cm2           | 0.6039     | 0.6039      | 0       |
| 63       | 1e+12           | 1E12n/cm2           | 0.603      | 0.603       | 0       |
| 64       | 5e+12           | 5E12n/cm2           | 0.599      | 0.5971      | -0.0019 |
| 65       | 5e+12           | 5E12n/cm2           | 0.6061     | 0.603       | -0.0031 |
| 66       | 5e+12           | 5E12n/cm2           | 0.6021     | 0.599       | -0.0031 |
| 67       | 5e+12           | 5E12n/cm2           | 0.598      | 0.5959      | -0.0021 |
| 68       | 1e+13           | 1E13n/cm2           | 0.607      | 0.6021      | -0.0049 |
| 69       | 1e+13           | 1E13n/cm2           | 0.607      | 0.6021      | -0.0049 |
| 70       | 1e+13           | 1E13n/cm2           | 0.6021     | 0.5971      | -0.005  |
| 71       | 1e+13           | 1E13n/cm2           | 0.6039     | 0.6011      | -0.0028 |

NDD vs Post - Pre Exposure Delta

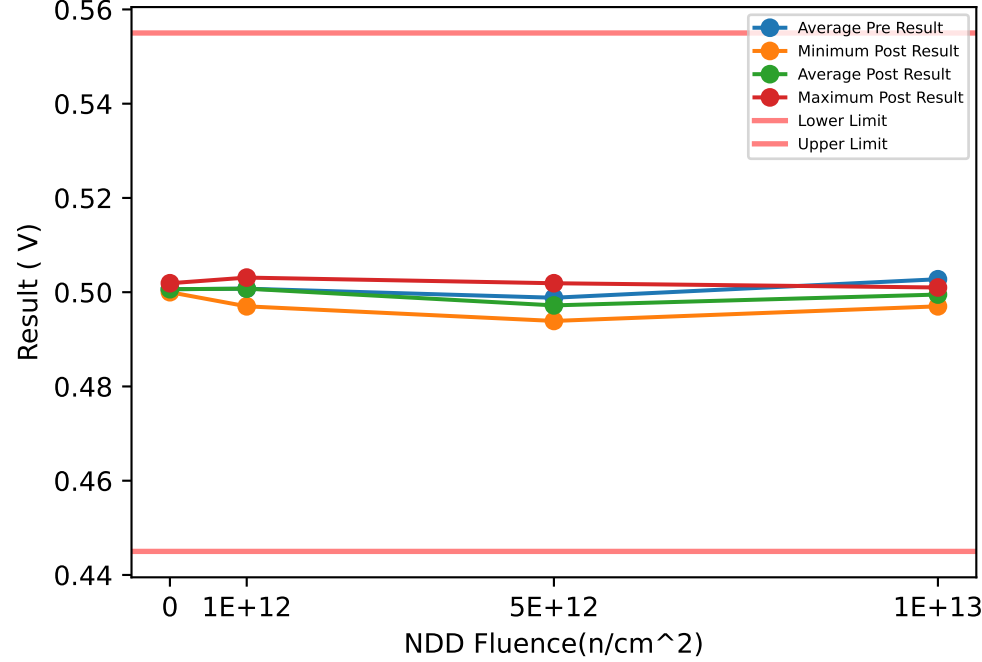


Test Statistics ( V )

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|------------|
| 0               | 0.6021           | 0.6033           | 0.6048           | 0.0013748        | 0.6021            | 0.6033            | 0.6048            | 0.0013748         | 0         | 0         | 0         | 0          |
| 1e+12           | 0.5999           | 0.6029           | 0.6048           | 0.0021307        | 0.5999            | 0.6029            | 0.6048            | 0.0021307         | 0         | 0         | 0         | 0          |
| 5e+12           | 0.598            | 0.6013           | 0.6061           | 0.0036451        | 0.5959            | 0.59875           | 0.603             | 0.0031075         | -0.0031   | -0.00255  | -0.0019   | 0.00064031 |
| 1e+13           | 0.6021           | 0.605            | 0.607            | 0.0024235        | 0.5971            | 0.6006            | 0.6021            | 0.0023805         | -0.005    | -0.0044   | -0.0028   | 0.0010677  |

Device Test: 65.3 ENABLE|/EN/FALL///3/@V\_EN\_FALLING

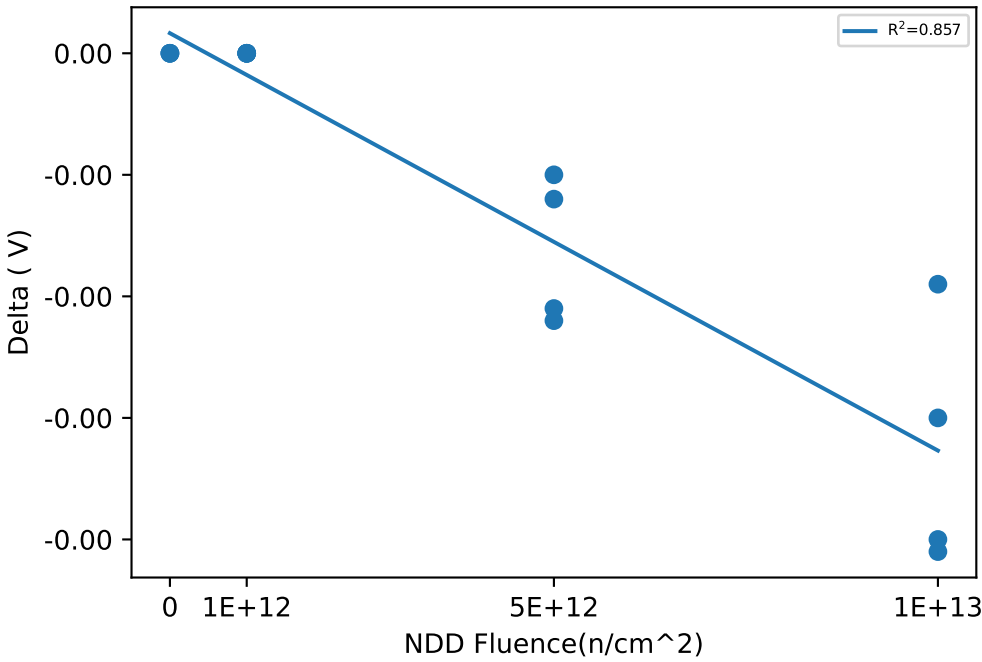
NDD vs Result Stats



Test Results (Lower Limit = 0.445, Upper Limit = 0.555 ( V))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 0.5019     | 0.5019      | 0       |
| 2        | 0               | CU2                 | 0.5        | 0.5         | 0       |
| 3        | 0               | CU3                 | 0.5        | 0.5         | 0       |
| 60       | 1e+12           | 1E12n/cm2           | 0.497      | 0.497       | 0       |
| 61       | 1e+12           | 1E12n/cm2           | 0.5031     | 0.5031      | 0       |
| 62       | 1e+12           | 1E12n/cm2           | 0.5019     | 0.5019      | 0       |
| 63       | 1e+12           | 1E12n/cm2           | 0.501      | 0.501       | 0       |
| 64       | 5e+12           | 5E12n/cm2           | 0.497      | 0.496       | -0.001  |
| 65       | 5e+12           | 5E12n/cm2           | 0.5041     | 0.5019      | -0.0022 |
| 66       | 5e+12           | 5E12n/cm2           | 0.4991     | 0.497       | -0.0021 |
| 67       | 5e+12           | 5E12n/cm2           | 0.4951     | 0.4939      | -0.0012 |
| 68       | 1e+13           | 1E13n/cm2           | 0.5041     | 0.5         | -0.0041 |
| 69       | 1e+13           | 1E13n/cm2           | 0.505      | 0.501       | -0.004  |
| 70       | 1e+13           | 1E13n/cm2           | 0.5        | 0.497       | -0.003  |
| 71       | 1e+13           | 1E13n/cm2           | 0.5019     | 0.5         | -0.0019 |

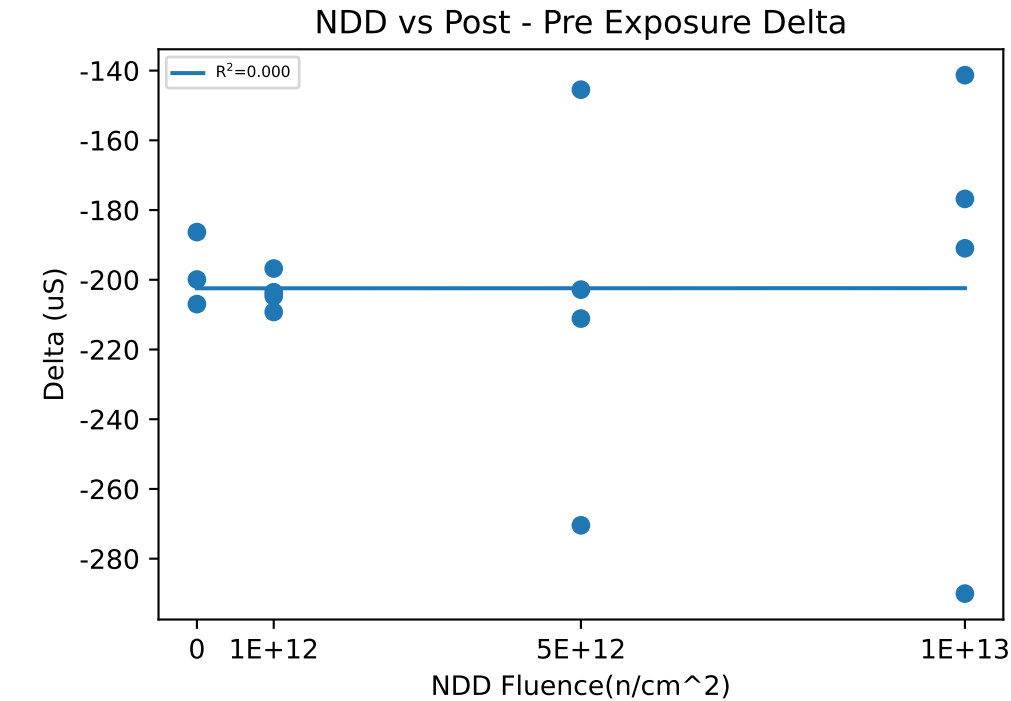
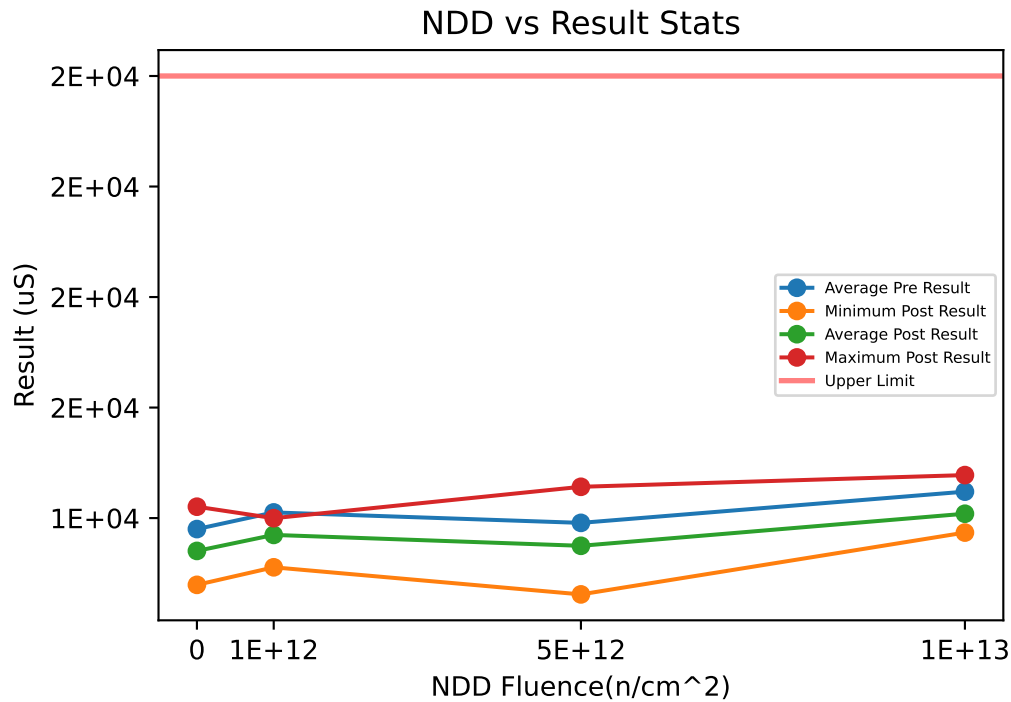
NDD vs Post - Pre Exposure Delta



Test Statistics ( V)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|------------|
| 0               | 0.5              | 0.50063          | 0.5019           | 0.001097         | 0.5               | 0.50063           | 0.5019            | 0.001097          | 0         | 0         | 0         | 0          |
| 1e+12           | 0.497            | 0.50075          | 0.5031           | 0.0026439        | 0.497             | 0.50075           | 0.5031            | 0.0026439         | 0         | 0         | 0         | 0          |
| 5e+12           | 0.4951           | 0.49882          | 0.5041           | 0.0038776        | 0.4939            | 0.4972            | 0.5019            | 0.0033892         | -0.0022   | -0.001625 | -0.001    | 0.00061305 |
| 1e+13           | 0.5              | 0.50275          | 0.505            | 0.0022487        | 0.497             | 0.4995            | 0.501             | 0.0017321         | -0.0041   | -0.00325  | -0.0019   | 0.0010279  |

Device Test: 65.4 ENABLE|/EN/DELAY///3/@T\_EN\_DELAY



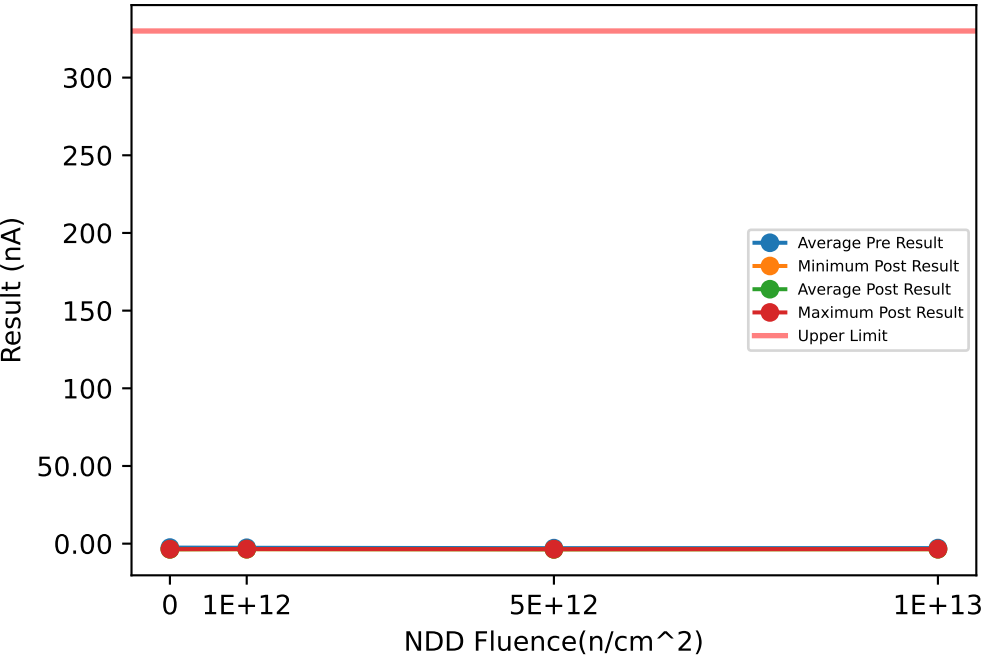
| Test Results (Upper Limit = 18000.0 (uS)) |                 |                     |            |             |         |
|-------------------------------------------|-----------------|---------------------|------------|-------------|---------|
| Serial #                                  | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
| 1                                         | 0               | CU1                 | 1.38e+04   | 1.36e+04    | -186.32 |
| 2                                         | 0               | CU2                 | 1.43e+04   | 1.41e+04    | -199.92 |
| 3                                         | 0               | CU3                 | 1.36e+04   | 1.34e+04    | -206.98 |
| 60                                        | 1e+12           | 1E12n/cm2           | 1.42e+04   | 1.4e+04     | -196.77 |
| 61                                        | 1e+12           | 1E12n/cm2           | 1.42e+04   | 1.4e+04     | -203.56 |
| 62                                        | 1e+12           | 1E12n/cm2           | 1.38e+04   | 1.36e+04    | -209.24 |
| 63                                        | 1e+12           | 1E12n/cm2           | 1.41e+04   | 1.39e+04    | -204.68 |
| 64                                        | 5e+12           | 5E12n/cm2           | 1.39e+04   | 1.37e+04    | -202.82 |
| 65                                        | 5e+12           | 5E12n/cm2           | 1.44e+04   | 1.43e+04    | -145.47 |
| 66                                        | 5e+12           | 5E12n/cm2           | 1.36e+04   | 1.33e+04    | -270.43 |
| 67                                        | 5e+12           | 5E12n/cm2           | 1.39e+04   | 1.37e+04    | -211.13 |
| 68                                        | 1e+13           | 1E13n/cm2           | 1.46e+04   | 1.44e+04    | -176.8  |
| 69                                        | 1e+13           | 1E13n/cm2           | 1.4e+04    | 1.39e+04    | -141.32 |
| 70                                        | 1e+13           | 1E13n/cm2           | 1.42e+04   | 1.4e+04     | -190.97 |
| 71                                        | 1e+13           | 1E13n/cm2           | 1.42e+04   | 1.39e+04    | -290.02 |

Test Statistics (uS)

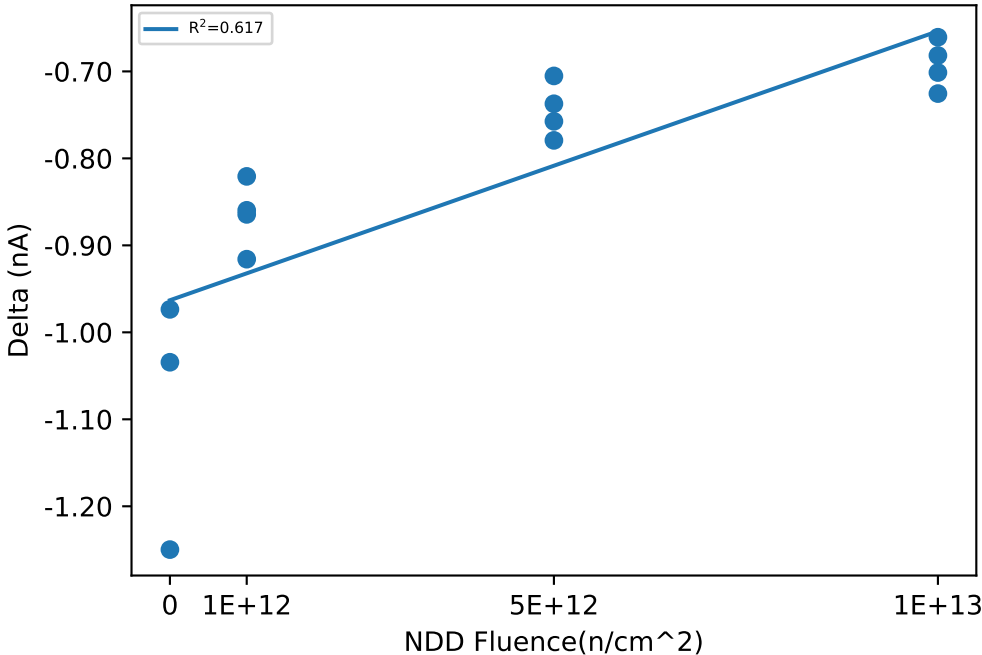
| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 1.36e+04         | 1.39e+04         | 1.43e+04         | 361.5            | 1.34e+04          | 1.37e+04          | 1.41e+04          | 362.59            | -206.98   | -197.74   | -186.32   | 10.5      |
| 1e+12           | 1.38e+04         | 1.41e+04         | 1.42e+04         | 201.71           | 1.36e+04          | 1.38e+04          | 1.4e+04           | 205.85            | -209.24   | -203.56   | -196.77   | 5.1523    |
| 5e+12           | 1.36e+04         | 1.4e+04          | 1.44e+04         | 350.95           | 1.33e+04          | 1.37e+04          | 1.43e+04          | 401.23            | -270.43   | -207.46   | -145.47   | 51.13     |
| 1e+13           | 1.4e+04          | 1.42e+04         | 1.46e+04         | 234.2            | 1.39e+04          | 1.4e+04           | 1.44e+04          | 237.61            | -290.02   | -199.78   | -141.32   | 63.68     |

Device Test: 65.5 LEAK|/EN/CURRENT///5/@I\_EN\_LKG

NDD vs Result Stats



NDD vs Post - Pre Exposure Delta



Test Results (Upper Limit = 330.0 (nA))

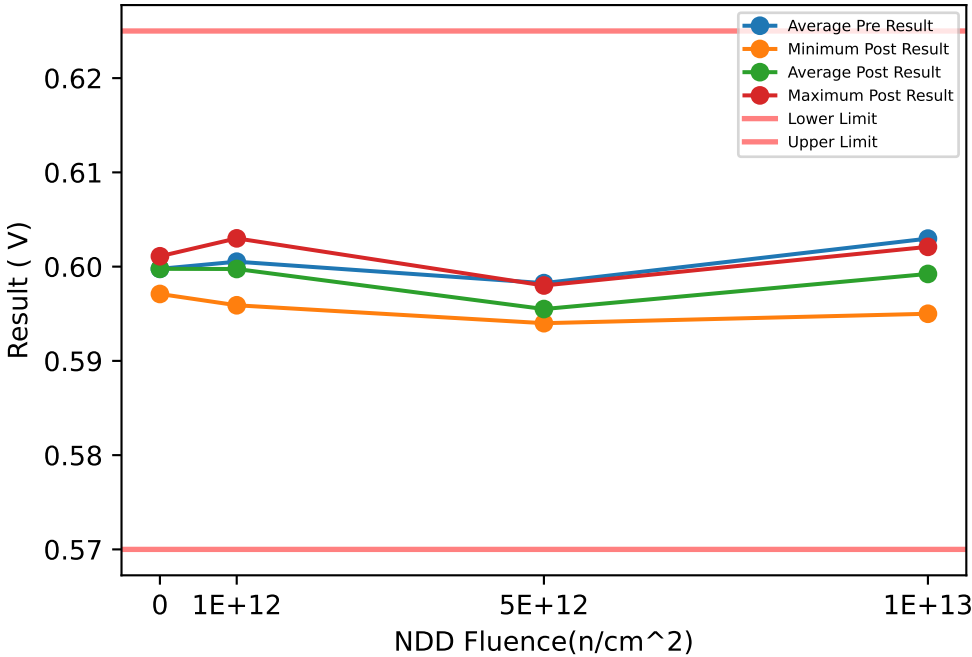
| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | -2.4281    | -3.6779     | -1.2498 |
| 2        | 0               | CU2                 | -2.4718    | -3.5062     | -1.0344 |
| 3        | 0               | CU3                 | -2.6497    | -3.6233     | -0.9736 |
| 60       | 1e+12           | 1E12n/cm2           | -2.5381    | -3.454      | -0.9159 |
| 61       | 1e+12           | 1E12n/cm2           | -2.5826    | -3.4423     | -0.8597 |
| 62       | 1e+12           | 1E12n/cm2           | -2.7027    | -3.5234     | -0.8207 |
| 63       | 1e+12           | 1E12n/cm2           | -2.7558    | -3.6202     | -0.8644 |
| 64       | 5e+12           | 5E12n/cm2           | -2.9516    | -3.6888     | -0.7372 |
| 65       | 5e+12           | 5E12n/cm2           | -2.7425    | -3.5218     | -0.7793 |
| 66       | 5e+12           | 5E12n/cm2           | -2.9384    | -3.6958     | -0.7574 |
| 67       | 5e+12           | 5E12n/cm2           | -2.9111    | -3.6163     | -0.7052 |
| 68       | 1e+13           | 1E13n/cm2           | -2.9251    | -3.5858     | -0.6607 |
| 69       | 1e+13           | 1E13n/cm2           | -2.8385    | -3.5398     | -0.7013 |
| 70       | 1e+13           | 1E13n/cm2           | -2.9306    | -3.6123     | -0.6817 |
| 71       | 1e+13           | 1E13n/cm2           | -2.7355    | -3.461      | -0.7255 |

Test Statistics (nA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | -2.6497          | -2.5165          | -2.4281          | 0.11738          | -3.6779           | -3.6025           | -3.5062           | 0.087725          | -1.2498   | -1.0859   | -0.9736   | 0.14513   |
| 1e+12           | -2.7558          | -2.6448          | -2.5381          | 0.10153          | -3.6202           | -3.51             | -3.4423           | 0.081737          | -0.9159   | -0.86517  | -0.8207   | 0.03908   |
| 5e+12           | -2.9516          | -2.8859          | -2.7425          | 0.097076         | -3.6958           | -3.6307           | -3.5218           | 0.080994          | -0.7793   | -0.74477  | -0.7052   | 0.03149   |
| 1e+13           | -2.9306          | -2.8574          | -2.7355          | 0.091576         | -3.6123           | -3.5497           | -3.461            | 0.066302          | -0.7255   | -0.6923   | -0.6607   | 0.027654  |

Device Test: 65.6 ENABLE|/EN/RISE///5/@V\_EN\_RISING

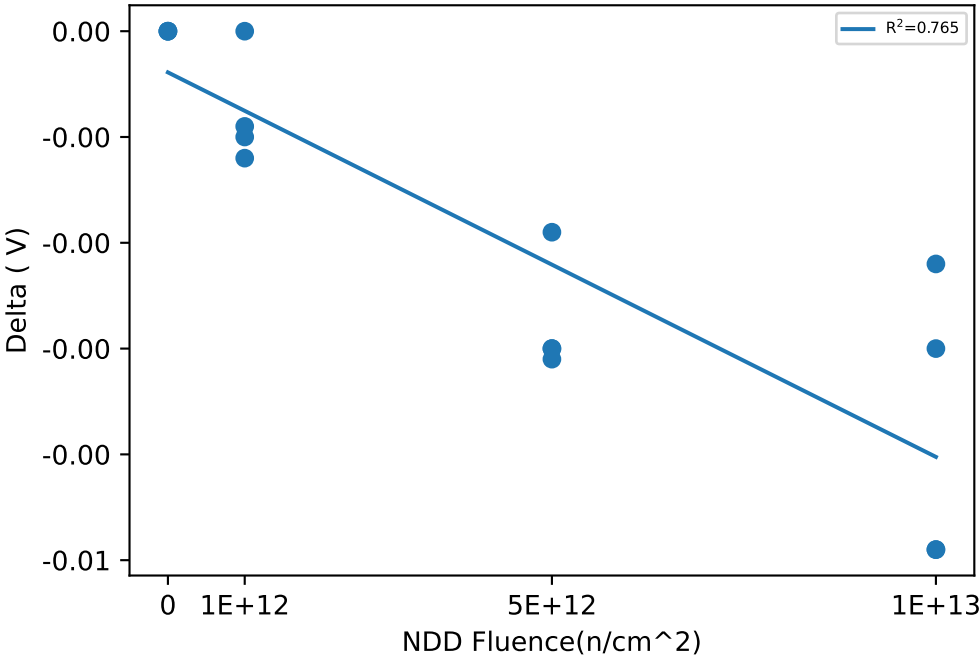
NDD vs Result Stats



Test Results (Lower Limit = 0.57, Upper Limit = 0.625 ( V))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 0.6011     | 0.6011      | 0       |
| 2        | 0               | CU2                 | 0.5971     | 0.5971      | 0       |
| 3        | 0               | CU3                 | 0.6011     | 0.6011      | 0       |
| 60       | 1e+12           | 1E12n/cm2           | 0.5971     | 0.5959      | -0.0012 |
| 61       | 1e+12           | 1E12n/cm2           | 0.603      | 0.6021      | -0.0009 |
| 62       | 1e+12           | 1E12n/cm2           | 0.599      | 0.598       | -0.001  |
| 63       | 1e+12           | 1E12n/cm2           | 0.603      | 0.603       | 0       |
| 64       | 5e+12           | 5E12n/cm2           | 0.598      | 0.595       | -0.003  |
| 65       | 5e+12           | 5E12n/cm2           | 0.5999     | 0.598       | -0.0019 |
| 66       | 5e+12           | 5E12n/cm2           | 0.5971     | 0.594       | -0.0031 |
| 67       | 5e+12           | 5E12n/cm2           | 0.598      | 0.595       | -0.003  |
| 68       | 1e+13           | 1E13n/cm2           | 0.607      | 0.6021      | -0.0049 |
| 69       | 1e+13           | 1E13n/cm2           | 0.6048     | 0.5999      | -0.0049 |
| 70       | 1e+13           | 1E13n/cm2           | 0.598      | 0.595       | -0.003  |
| 71       | 1e+13           | 1E13n/cm2           | 0.6021     | 0.5999      | -0.0022 |

NDD vs Post - Pre Exposure Delta

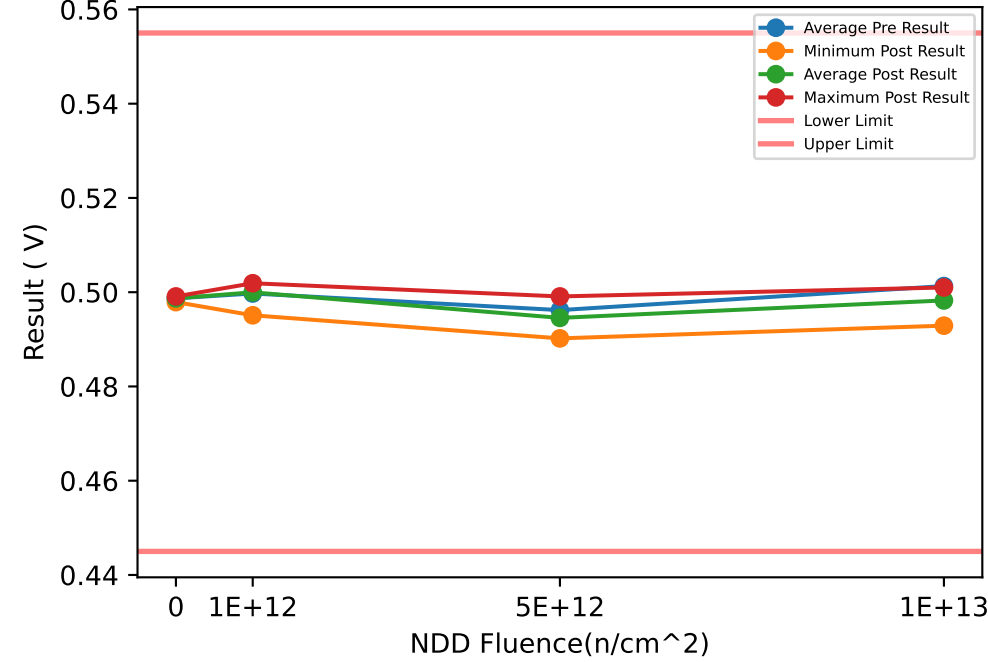


Test Statistics ( V )

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|------------|
| 0               | 0.5971           | 0.59977          | 0.6011           | 0.0023094        | 0.5971            | 0.59977           | 0.6011            | 0.0023094         | 0         | 0         | 0         | 0          |
| 1e+12           | 0.5971           | 0.60052          | 0.603            | 0.0029613        | 0.5959            | 0.59975           | 0.603             | 0.003365          | -0.0012   | -0.000775 | 0         | 0.00053151 |
| 5e+12           | 0.5971           | 0.59825          | 0.5999           | 0.001179         | 0.594             | 0.5955            | 0.598             | 0.0017321         | -0.0031   | -0.00275  | -0.0019   | 0.00056862 |
| 1e+13           | 0.598            | 0.60298          | 0.607            | 0.003875         | 0.595             | 0.59923           | 0.6021            | 0.0030015         | -0.0049   | -0.00375  | -0.0022   | 0.0013675  |

Device Test: 65.7 ENABLE|/EN/FALL///5/@V\_EN\_FALLING

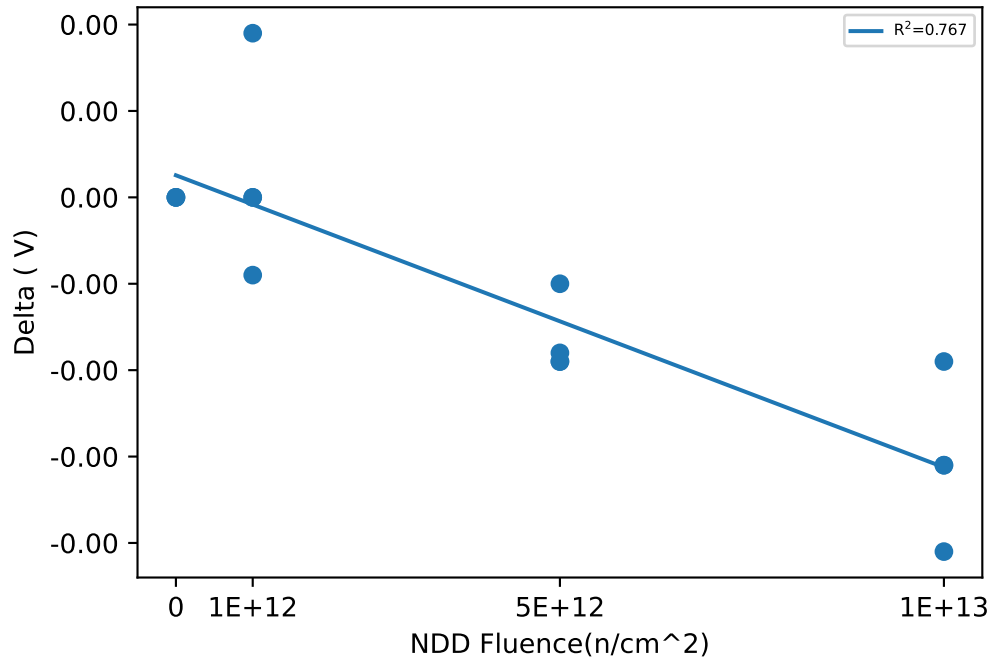
NDD vs Result Stats



Test Results (Lower Limit = 0.445, Upper Limit = 0.555 ( V))

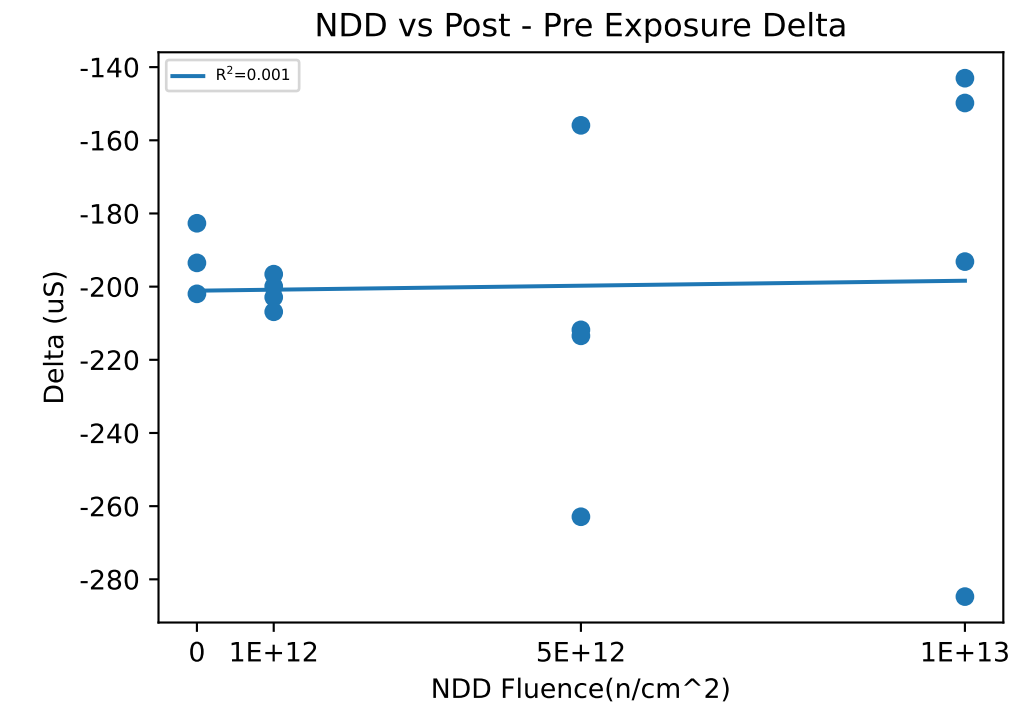
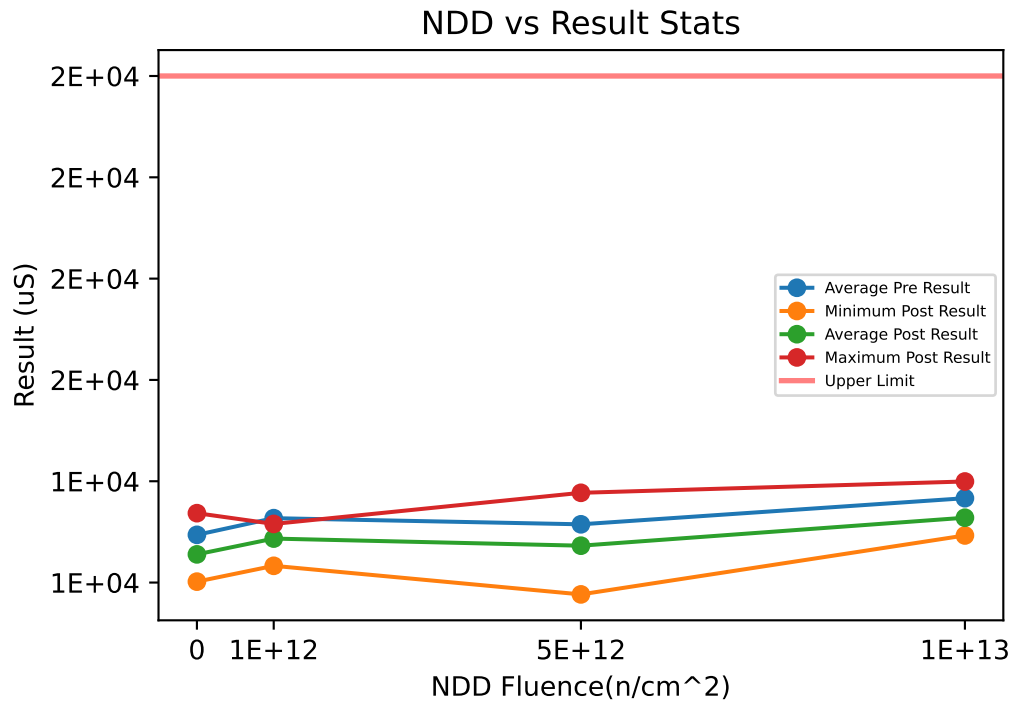
| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 0.4991     | 0.4991      | 0       |
| 2        | 0               | CU2                 | 0.4979     | 0.4979      | 0       |
| 3        | 0               | CU3                 | 0.4991     | 0.4991      | 0       |
| 60       | 1e+12           | 1E12n/cm2           | 0.496      | 0.4951      | -0.0009 |
| 61       | 1e+12           | 1E12n/cm2           | 0.5019     | 0.5019      | 0       |
| 62       | 1e+12           | 1E12n/cm2           | 0.4991     | 0.501       | 0.0019  |
| 63       | 1e+12           | 1E12n/cm2           | 0.5019     | 0.5019      | 0       |
| 64       | 5e+12           | 5E12n/cm2           | 0.4939     | 0.4929      | -0.001  |
| 65       | 5e+12           | 5E12n/cm2           | 0.501      | 0.4991      | -0.0019 |
| 66       | 5e+12           | 5E12n/cm2           | 0.4979     | 0.496       | -0.0019 |
| 67       | 5e+12           | 5E12n/cm2           | 0.492      | 0.4902      | -0.0018 |
| 68       | 1e+13           | 1E13n/cm2           | 0.5041     | 0.501       | -0.0031 |
| 69       | 1e+13           | 1E13n/cm2           | 0.5031     | 0.5         | -0.0031 |
| 70       | 1e+13           | 1E13n/cm2           | 0.497      | 0.4929      | -0.0041 |
| 71       | 1e+13           | 1E13n/cm2           | 0.501      | 0.4991      | -0.0019 |

NDD vs Post - Pre Exposure Delta



Test Statistics ( V)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|------------|
| 0               | 0.4979           | 0.4987           | 0.4991           | 0.00069282       | 0.4979            | 0.4987            | 0.4991            | 0.00069282        | 0         | 0         | 0         | 0          |
| 1e+12           | 0.496            | 0.49972          | 0.5019           | 0.0028123        | 0.4951            | 0.49998           | 0.5019            | 0.0032776         | -0.0009   | 0.00025   | 0.0019    | 0.001179   |
| 5e+12           | 0.492            | 0.4962           | 0.501            | 0.0040357        | 0.4902            | 0.49455           | 0.4991            | 0.0038492         | -0.0019   | -0.00165  | -0.001    | 0.00043589 |
| 1e+13           | 0.497            | 0.5013           | 0.5041           | 0.0031443        | 0.4929            | 0.49825           | 0.501             | 0.0036501         | -0.0041   | -0.00305  | -0.0019   | 0.0009     |

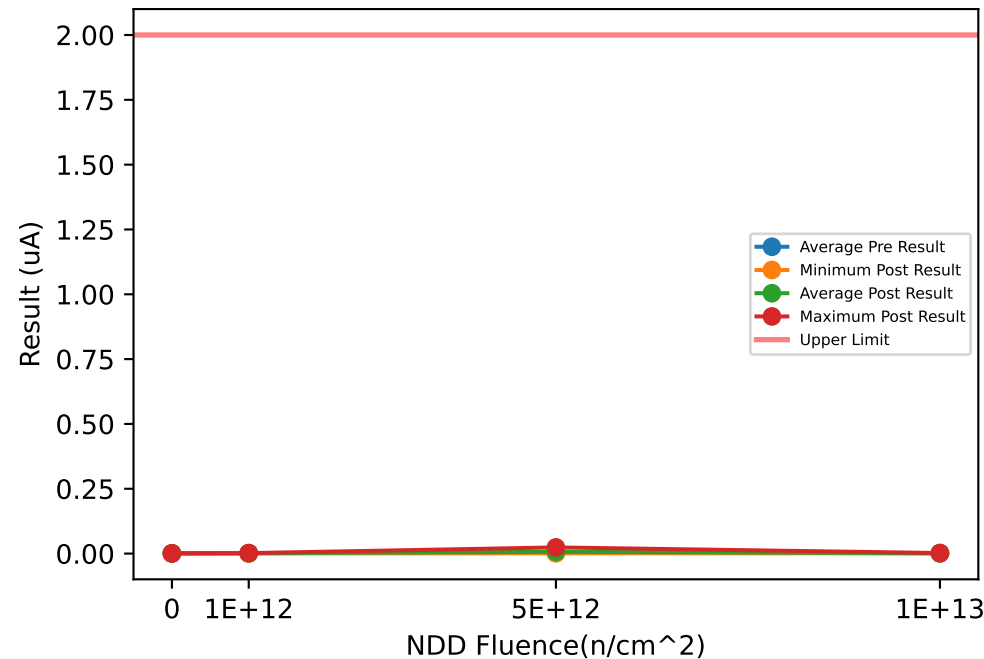


| Test Results (Upper Limit = 18000.0 (uS)) |                 |                     |            |             |         |
|-------------------------------------------|-----------------|---------------------|------------|-------------|---------|
| Serial #                                  | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
| 1                                         | 0               | CU1                 | 1.33e+04   | 1.31e+04    | -193.51 |
| 2                                         | 0               | CU2                 | 1.39e+04   | 1.37e+04    | -201.97 |
| 3                                         | 0               | CU3                 | 1.32e+04   | 1.3e+04     | -182.68 |
| 60                                        | 1e+12           | 1E12n/cm2           | 1.37e+04   | 1.35e+04    | -196.59 |
| 61                                        | 1e+12           | 1E12n/cm2           | 1.38e+04   | 1.36e+04    | -206.87 |
| 62                                        | 1e+12           | 1E12n/cm2           | 1.34e+04   | 1.32e+04    | -199.9  |
| 63                                        | 1e+12           | 1E12n/cm2           | 1.37e+04   | 1.35e+04    | -202.9  |
| 64                                        | 5e+12           | 5E12n/cm2           | 1.35e+04   | 1.33e+04    | -211.81 |
| 65                                        | 5e+12           | 5E12n/cm2           | 1.4e+04    | 1.39e+04    | -155.91 |
| 66                                        | 5e+12           | 5E12n/cm2           | 1.31e+04   | 1.29e+04    | -262.9  |
| 67                                        | 5e+12           | 5E12n/cm2           | 1.36e+04   | 1.33e+04    | -213.45 |
| 68                                        | 1e+13           | 1E13n/cm2           | 1.41e+04   | 1.4e+04     | -149.81 |
| 69                                        | 1e+13           | 1E13n/cm2           | 1.36e+04   | 1.35e+04    | -143.03 |
| 70                                        | 1e+13           | 1E13n/cm2           | 1.38e+04   | 1.36e+04    | -193.15 |
| 71                                        | 1e+13           | 1E13n/cm2           | 1.38e+04   | 1.35e+04    | -284.72 |

| Test Statistics (uS) |                  |                  |                  |                  |                   |                   |                   |                   |           |           |           |           |
|----------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| Fluence(n/cm^2)      | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
| 0                    | 1.32e+04         | 1.35e+04         | 1.39e+04         | 367.14           | 1.3e+04           | 1.33e+04          | 1.37e+04          | 358.25            | -201.97   | -192.72   | -182.68   | 9.669     |
| 1e+12                | 1.34e+04         | 1.36e+04         | 1.38e+04         | 187.36           | 1.32e+04          | 1.34e+04          | 1.36e+04          | 185.97            | -206.87   | -201.57   | -196.59   | 4.3762    |
| 5e+12                | 1.31e+04         | 1.36e+04         | 1.4e+04          | 366.39           | 1.29e+04          | 1.34e+04          | 1.39e+04          | 410.08            | -262.9    | -211.02   | -155.91   | 43.721    |
| 1e+13                | 1.36e+04         | 1.38e+04         | 1.41e+04         | 226.98           | 1.35e+04          | 1.36e+04          | 1.4e+04           | 247.78            | -284.72   | -192.68   | -143.03   | 65.256    |

Device Test: 70.1 LEAK|/PG/CURRENT/1N8V//3/@PWRGD\_OUTPUT\_HIGH\_LEAK

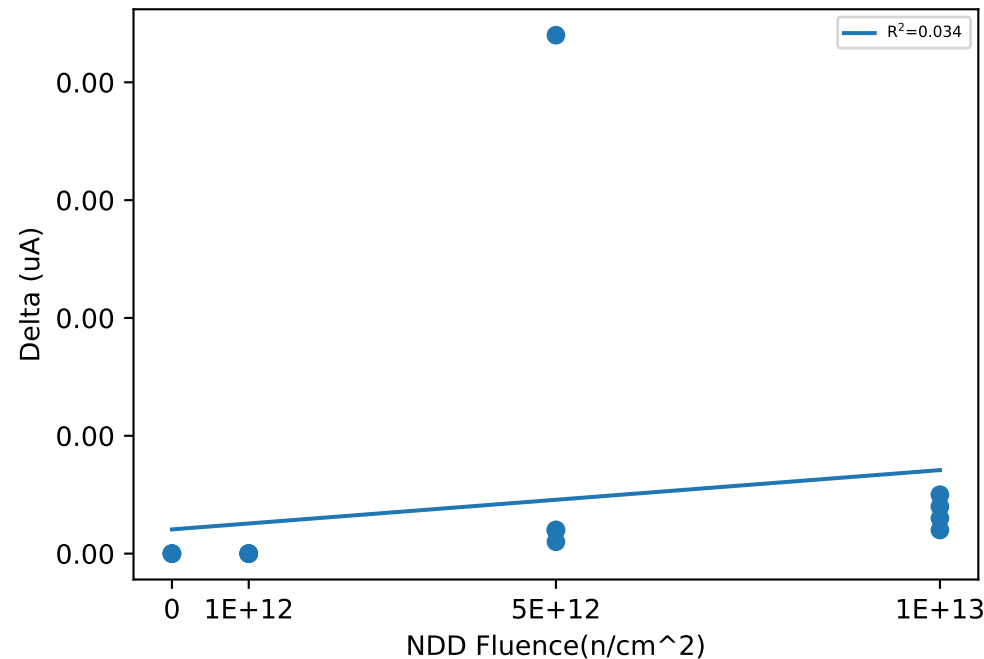
NDD vs Result Stats



Test Results (Upper Limit = 2.0 (uA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 0.0007     | 0.0007      | 0      |
| 2        | 0               | CU2                 | 0.0007     | 0.0007      | 0      |
| 3        | 0               | CU3                 | 0.0009     | 0.0009      | 0      |
| 60       | 1e+12           | 1E12n/cm2           | 0.0008     | 0.0008      | 0      |
| 61       | 1e+12           | 1E12n/cm2           | 0.0011     | 0.0011      | 0      |
| 62       | 1e+12           | 1E12n/cm2           | 0.0018     | 0.0018      | 0      |
| 63       | 1e+12           | 1E12n/cm2           | 0.0017     | 0.0017      | 0      |
| 64       | 5e+12           | 5E12n/cm2           | 0.0194     | 0.0238      | 0.0044 |
| 65       | 5e+12           | 5E12n/cm2           | 0.0009     | 0.001       | 0.0001 |
| 66       | 5e+12           | 5E12n/cm2           | 0.0009     | 0.0011      | 0.0002 |
| 67       | 5e+12           | 5E12n/cm2           | 0.0007     | 0.0009      | 0.0002 |
| 68       | 1e+13           | 1E13n/cm2           | 0.0008     | 0.001       | 0.0002 |
| 69       | 1e+13           | 1E13n/cm2           | 0.0016     | 0.0021      | 0.0005 |
| 70       | 1e+13           | 1E13n/cm2           | 0.001      | 0.0014      | 0.0004 |
| 71       | 1e+13           | 1E13n/cm2           | 0.001      | 0.0013      | 0.0003 |

NDD vs Post - Pre Exposure Delta

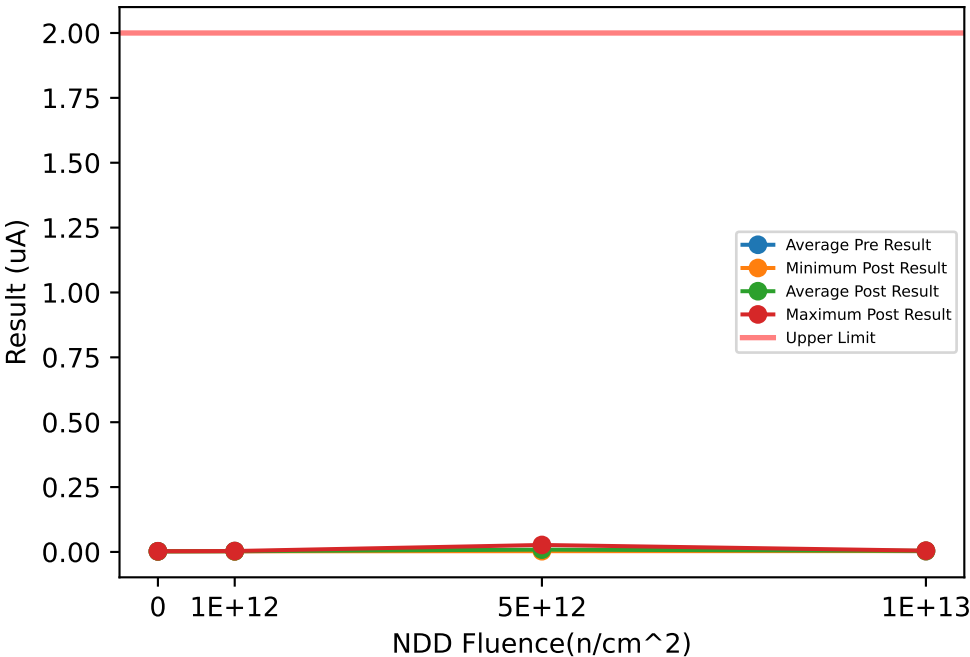


Test Statistics (uA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 0.0007           | 0.00076667       | 0.0009           | 0.00011547       | 0.0007            | 0.00076667        | 0.0009            | 0.00011547        | 0         | 0         | 0         | 0         |
| 1e+12           | 0.0008           | 0.00135          | 0.0018           | 0.00047958       | 0.0008            | 0.00135           | 0.0018            | 0.00047958        | 0         | 0         | 0         | 0         |
| 5e+12           | 0.0007           | 0.005475         | 0.0194           | 0.0092838        | 0.0009            | 0.0067            | 0.0238            | 0.0114            | 0.0001    | 0.001225  | 0.0044    | 0.0021172 |
| 1e+13           | 0.0008           | 0.0011           | 0.0016           | 0.00034641       | 0.001             | 0.00145           | 0.0021            | 0.00046547        | 0.0002    | 0.00035   | 0.0005    | 0.0001291 |

Device Test: 70.2 LEAK|/PG/CURRENT/1N8V//6.3/@PWRGD\_OUTPUT\_HIGH\_LEAK

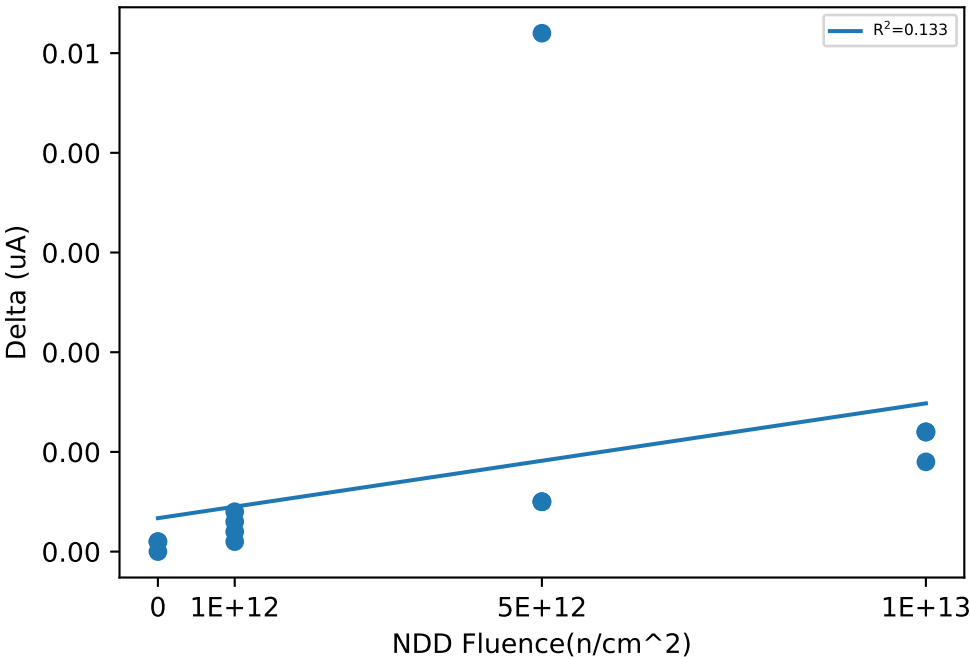
NDD vs Result Stats



Test Results (Upper Limit = 2.0 (uA))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 0.0021     | 0.0021      | 0      |
| 2        | 0               | CU2                 | 0.0024     | 0.0025      | 0.0001 |
| 3        | 0               | CU3                 | 0.0026     | 0.0027      | 0.0001 |
| 60       | 1e+12           | 1E12n/cm2           | 0.002      | 0.0023      | 0.0003 |
| 61       | 1e+12           | 1E12n/cm2           | 0.0024     | 0.0028      | 0.0004 |
| 62       | 1e+12           | 1E12n/cm2           | 0.0034     | 0.0036      | 0.0002 |
| 63       | 1e+12           | 1E12n/cm2           | 0.0034     | 0.0035      | 0.0001 |
| 64       | 5e+12           | 5E12n/cm2           | 0.0217     | 0.0269      | 0.0052 |
| 65       | 5e+12           | 5E12n/cm2           | 0.0023     | 0.0028      | 0.0005 |
| 66       | 5e+12           | 5E12n/cm2           | 0.0027     | 0.0032      | 0.0005 |
| 67       | 5e+12           | 5E12n/cm2           | 0.0023     | 0.0028      | 0.0005 |
| 68       | 1e+13           | 1E13n/cm2           | 0.0023     | 0.0032      | 0.0009 |
| 69       | 1e+13           | 1E13n/cm2           | 0.0038     | 0.005       | 0.0012 |
| 70       | 1e+13           | 1E13n/cm2           | 0.0034     | 0.0046      | 0.0012 |
| 71       | 1e+13           | 1E13n/cm2           | 0.0027     | 0.0039      | 0.0012 |

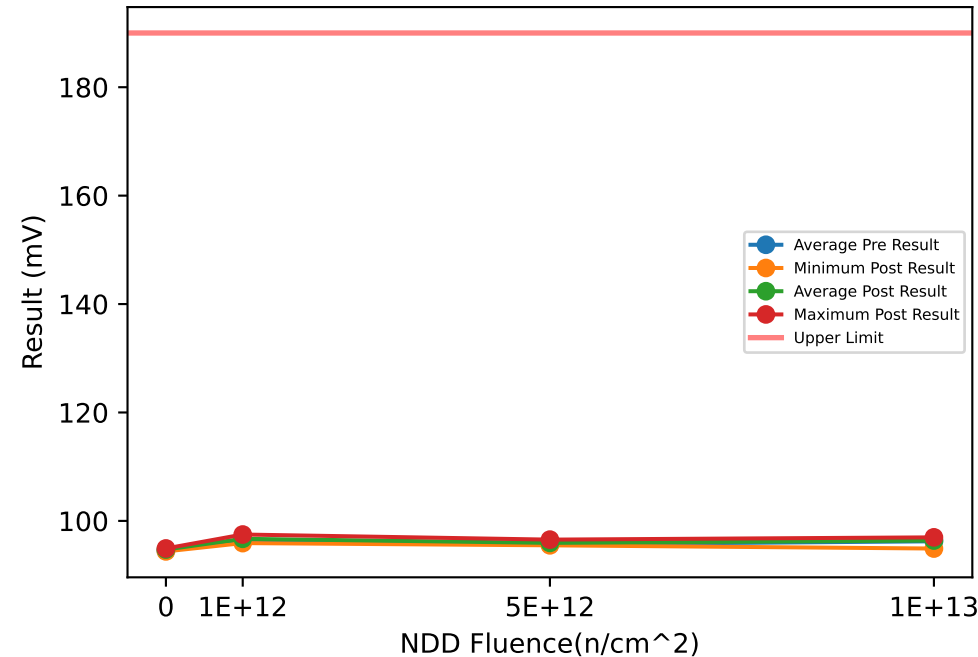
NDD vs Post - Pre Exposure Delta



Test Statistics (uA)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta  | Max Delta | Std Delta  |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|------------|-----------|------------|
| 0               | 0.0021           | 0.0023667        | 0.0026           | 0.00025166       | 0.0021            | 0.0024333         | 0.0027            | 0.00030551        | 0         | 6.6667e-05 | 0.0001    | 5.7735e-05 |
| 1e+12           | 0.002            | 0.0028           | 0.0034           | 0.00071181       | 0.0023            | 0.00305           | 0.0036            | 0.00061373        | 0.0001    | 0.00025    | 0.0004    | 0.0001291  |
| 5e+12           | 0.0023           | 0.00725          | 0.0217           | 0.0096352        | 0.0028            | 0.008925          | 0.0269            | 0.011985          | 0.0005    | 0.001675   | 0.0052    | 0.00235    |
| 1e+13           | 0.0023           | 0.00305          | 0.0038           | 0.00067577       | 0.0032            | 0.004175          | 0.005             | 0.0007932         | 0.0009    | 0.001125   | 0.0012    | 0.00015    |

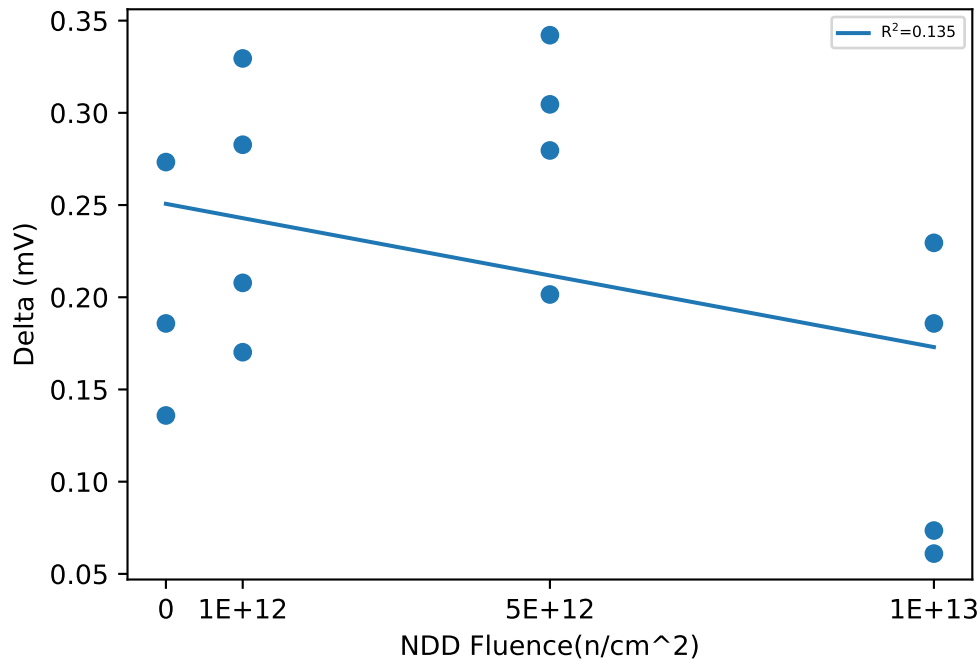
NDD vs Result Stats



Test Results (Upper Limit = 190.0 (mV))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 94.239     | 94.375      | 0.1359 |
| 2        | 0               | CU2                 | 94.645     | 94.919      | 0.2733 |
| 3        | 0               | CU3                 | 94.686     | 94.872      | 0.1858 |
| 60       | 1e+12           | 1E12n/cm2           | 95.623     | 95.906      | 0.2827 |
| 61       | 1e+12           | 1E12n/cm2           | 96.778     | 97.108      | 0.3295 |
| 62       | 1e+12           | 1E12n/cm2           | 96.085     | 96.293      | 0.2078 |
| 63       | 1e+12           | 1E12n/cm2           | 97.319     | 97.489      | 0.1702 |
| 64       | 5e+12           | 5E12n/cm2           | 95.192     | 95.496      | 0.3046 |
| 65       | 5e+12           | 5E12n/cm2           | 95.532     | 95.734      | 0.2015 |
| 66       | 5e+12           | 5E12n/cm2           | 96.207     | 96.549      | 0.3421 |
| 67       | 5e+12           | 5E12n/cm2           | 95.729     | 96.009      | 0.2796 |
| 68       | 1e+13           | 1E13n/cm2           | 96.454     | 96.683      | 0.2295 |
| 69       | 1e+13           | 1E13n/cm2           | 94.829     | 94.903      | 0.0735 |
| 70       | 1e+13           | 1E13n/cm2           | 96.906     | 96.967      | 0.061  |
| 71       | 1e+13           | 1E13n/cm2           | 96.766     | 96.952      | 0.1858 |

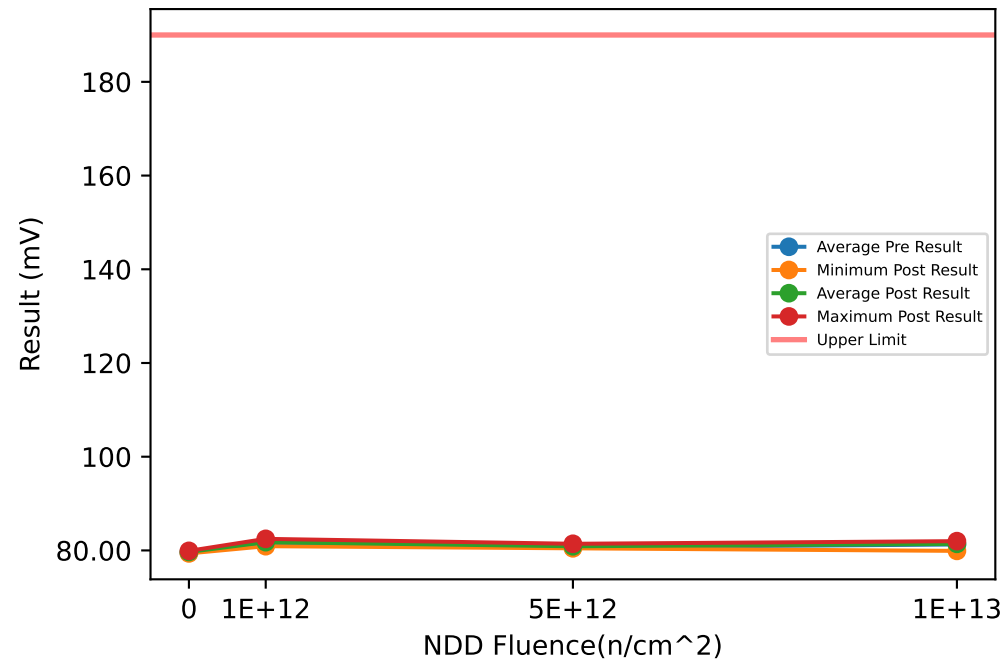
NDD vs Post - Pre Exposure Delta



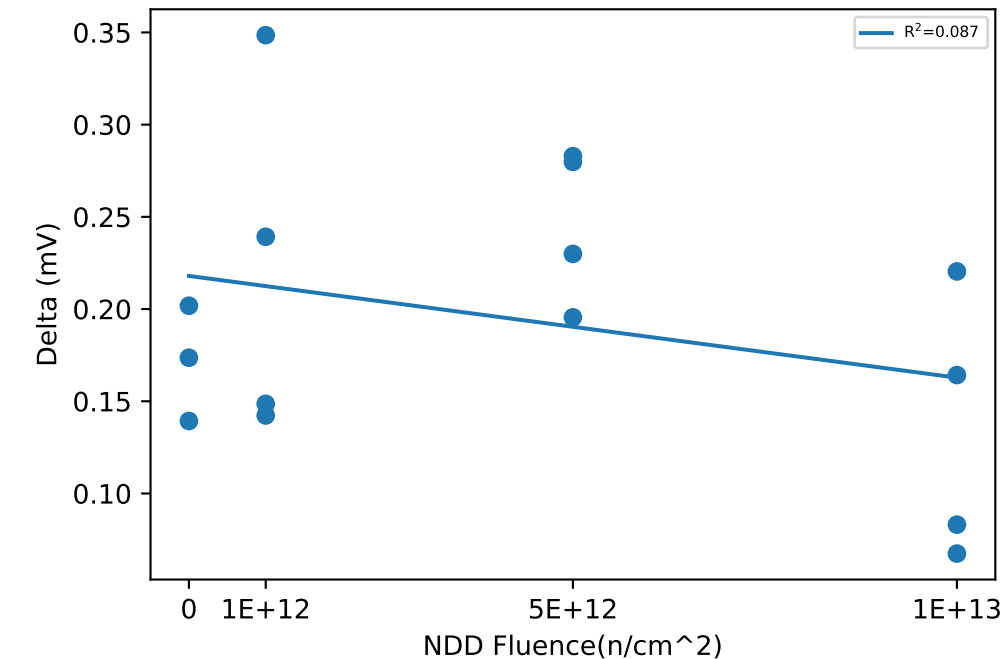
Test Statistics (mV)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 94.239           | 94.524           | 94.686           | 0.24696          | 94.375            | 94.722            | 94.919            | 0.30111           | 0.1359    | 0.19833   | 0.2733    | 0.069552  |
| 1e+12           | 95.623           | 96.451           | 97.319           | 0.74832          | 95.906            | 96.699            | 97.489            | 0.72704           | 0.1702    | 0.24755   | 0.3295    | 0.071913  |
| 5e+12           | 95.192           | 95.665           | 96.207           | 0.42395          | 95.496            | 95.947            | 96.549            | 0.45263           | 0.2015    | 0.28195   | 0.3421    | 0.059466  |
| 1e+13           | 94.829           | 96.239           | 96.906           | 0.95843          | 94.903            | 96.376            | 96.967            | 0.99083           | 0.061     | 0.13745   | 0.2295    | 0.083157  |

NDD vs Result Stats



NDD vs Post - Pre Exposure Delta



Test Results (Upper Limit = 190.0 (mV))

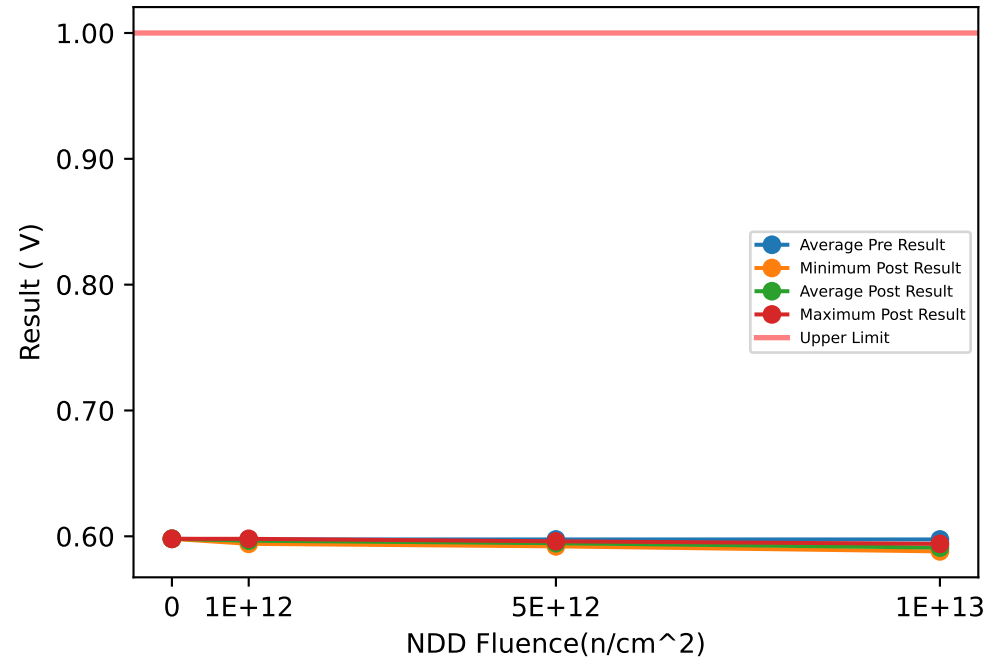
| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 79.226     | 79.366      | 0.1393 |
| 2        | 0               | CU2                 | 79.704     | 79.906      | 0.2018 |
| 3        | 0               | CU3                 | 79.592     | 79.765      | 0.1736 |
| 60       | 1e+12           | 1E12n/cm2           | 80.663     | 80.902      | 0.2392 |
| 61       | 1e+12           | 1E12n/cm2           | 82.121     | 82.47       | 0.3485 |
| 62       | 1e+12           | 1E12n/cm2           | 81.081     | 81.23       | 0.1486 |
| 63       | 1e+12           | 1E12n/cm2           | 82.309     | 82.451      | 0.1423 |
| 64       | 5e+12           | 5E12n/cm2           | 80.169     | 80.449      | 0.2798 |
| 65       | 5e+12           | 5E12n/cm2           | 80.519     | 80.715      | 0.1955 |
| 66       | 5e+12           | 5E12n/cm2           | 81.188     | 81.417      | 0.2299 |
| 67       | 5e+12           | 5E12n/cm2           | 80.666     | 80.949      | 0.2829 |
| 68       | 1e+13           | 1E13n/cm2           | 81.544     | 81.764      | 0.2204 |
| 69       | 1e+13           | 1E13n/cm2           | 79.82      | 79.903      | 0.0831 |
| 70       | 1e+13           | 1E13n/cm2           | 81.906     | 81.973      | 0.0674 |
| 71       | 1e+13           | 1E13n/cm2           | 81.815     | 81.98       | 0.1642 |

Test Statistics (mV)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 79.226           | 79.507           | 79.704           | 0.24981          | 79.366            | 79.679            | 79.906            | 0.28031           | 0.1393    | 0.17157   | 0.2018    | 0.0313    |
| 1e+12           | 80.663           | 81.544           | 82.309           | 0.79763          | 80.902            | 81.763            | 82.47             | 0.81618           | 0.1423    | 0.21965   | 0.3485    | 0.096636  |
| 5e+12           | 80.169           | 80.636           | 81.188           | 0.42285          | 80.449            | 80.883            | 81.417            | 0.41087           | 0.1955    | 0.24703   | 0.2829    | 0.042069  |
| 1e+13           | 79.82            | 81.271           | 81.906           | 0.97984          | 79.903            | 81.405            | 81.98             | 1.0064            | 0.0674    | 0.13377   | 0.2204    | 0.071655  |

Device Test: 71.1 POWER\_GOOD|//MIN\_VIN\_PG/1N8V|//@MIN\_VIN\_FOR\_PWRGD\_OUTPUT

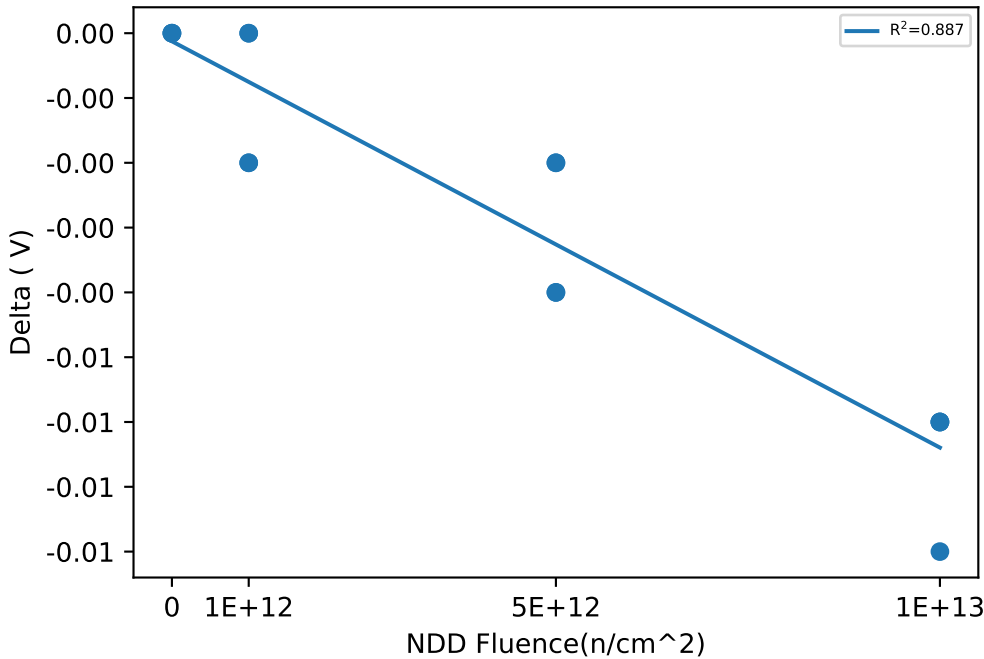
NDD vs Result Stats



Test Results (Upper Limit = 1.0 ( V))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 0.598      | 0.598       | 0      |
| 2        | 0               | CU2                 | 0.598      | 0.598       | 0      |
| 3        | 0               | CU3                 | 0.598      | 0.598       | 0      |
| 60       | 1e+12           | 1E12n/cm2           | 0.598      | 0.598       | 0      |
| 61       | 1e+12           | 1E12n/cm2           | 0.596      | 0.594       | -0.002 |
| 62       | 1e+12           | 1E12n/cm2           | 0.598      | 0.598       | 0      |
| 63       | 1e+12           | 1E12n/cm2           | 0.598      | 0.596       | -0.002 |
| 64       | 5e+12           | 5E12n/cm2           | 0.596      | 0.592       | -0.004 |
| 65       | 5e+12           | 5E12n/cm2           | 0.6        | 0.596       | -0.004 |
| 66       | 5e+12           | 5E12n/cm2           | 0.598      | 0.596       | -0.002 |
| 67       | 5e+12           | 5E12n/cm2           | 0.596      | 0.594       | -0.002 |
| 68       | 1e+13           | 1E13n/cm2           | 0.598      | 0.592       | -0.006 |
| 69       | 1e+13           | 1E13n/cm2           | 0.6        | 0.594       | -0.006 |
| 70       | 1e+13           | 1E13n/cm2           | 0.596      | 0.59        | -0.006 |
| 71       | 1e+13           | 1E13n/cm2           | 0.596      | 0.588       | -0.008 |

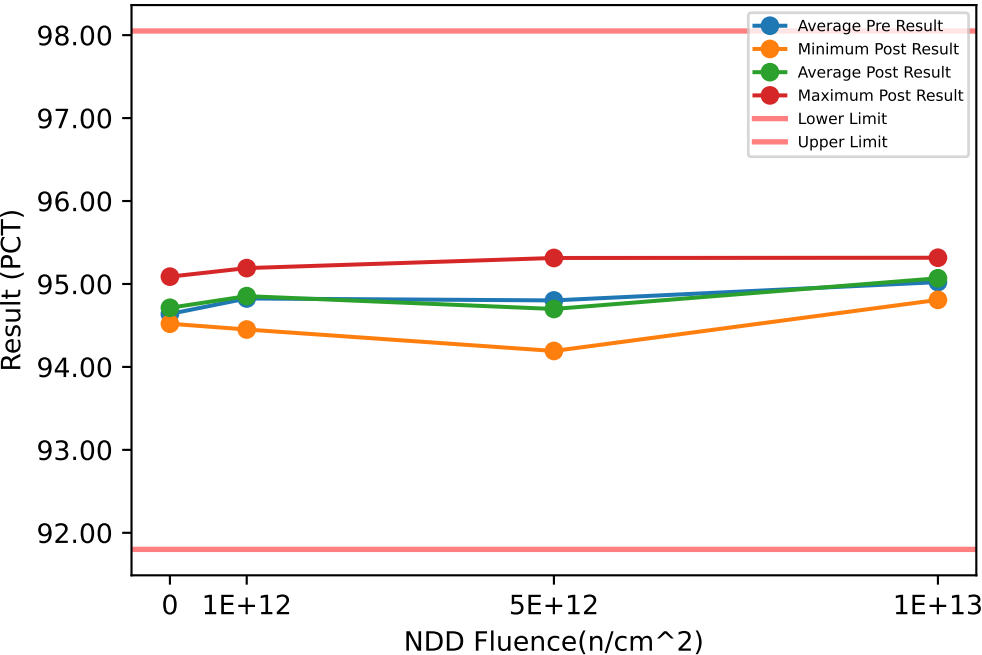
NDD vs Post - Pre Exposure Delta



Test Statistics ( V)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 0.598            | 0.598            | 0.598            | 0                | 0.598             | 0.598             | 0.598             | 0                 | 0         | 0         | 0         | 0         |
| 1e+12           | 0.596            | 0.5975           | 0.598            | 0.001            | 0.594             | 0.5965            | 0.598             | 0.0019149         | -0.002    | -0.001    | 0         | 0.0011547 |
| 5e+12           | 0.596            | 0.5975           | 0.6              | 0.0019149        | 0.592             | 0.5945            | 0.596             | 0.0019149         | -0.004    | -0.003    | -0.002    | 0.0011547 |
| 1e+13           | 0.596            | 0.5975           | 0.6              | 0.0019149        | 0.588             | 0.591             | 0.594             | 0.002582          | -0.008    | -0.0065   | -0.006    | 0.001     |

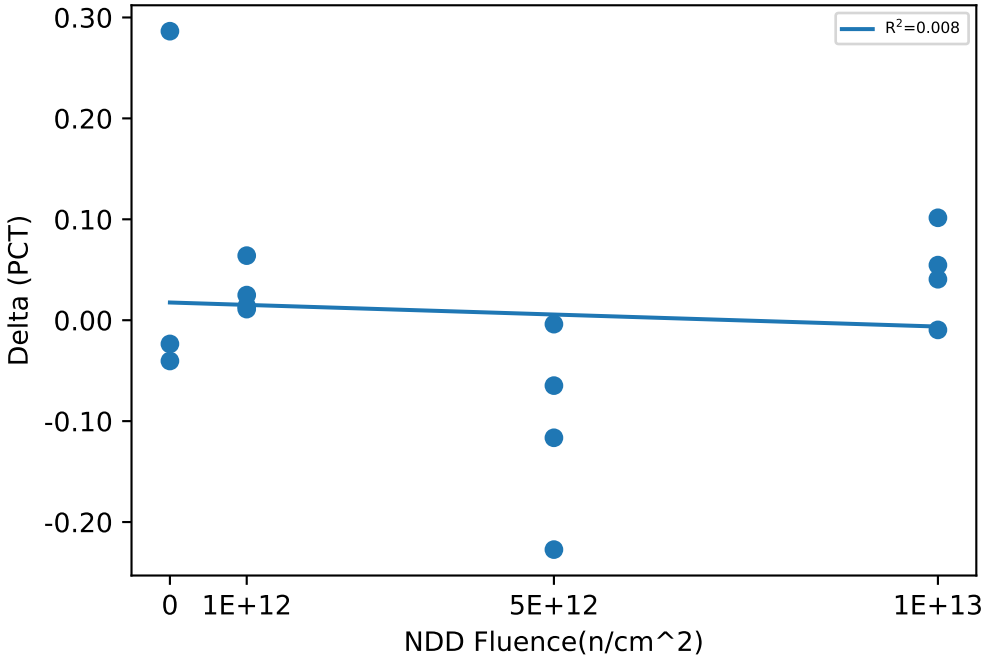
NDD vs Result Stats



Test Results (Lower Limit = 91.8, Upper Limit = 98.05 (PCT))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 94.544     | 94.521      | -0.0235 |
| 2        | 0               | CU2                 | 95.129     | 95.088      | -0.0404 |
| 3        | 0               | CU3                 | 94.243     | 94.529      | 0.2864  |
| 60       | 1e+12           | 1E12n/cm2           | 94.887     | 94.951      | 0.064   |
| 61       | 1e+12           | 1E12n/cm2           | 95.166     | 95.191      | 0.0249  |
| 62       | 1e+12           | 1E12n/cm2           | 94.437     | 94.451      | 0.0138  |
| 63       | 1e+12           | 1E12n/cm2           | 94.81      | 94.821      | 0.011   |
| 64       | 5e+12           | 5E12n/cm2           | 94.806     | 94.69       | -0.1165 |
| 65       | 5e+12           | 5E12n/cm2           | 95.317     | 95.313      | -0.0039 |
| 66       | 5e+12           | 5E12n/cm2           | 94.257     | 94.192      | -0.0648 |
| 67       | 5e+12           | 5E12n/cm2           | 94.826     | 94.599      | -0.2273 |
| 68       | 1e+13           | 1E13n/cm2           | 95.262     | 95.316      | 0.0546  |
| 69       | 1e+13           | 1E13n/cm2           | 94.818     | 94.808      | -0.0096 |
| 70       | 1e+13           | 1E13n/cm2           | 95.058     | 95.16       | 0.1015  |
| 71       | 1e+13           | 1E13n/cm2           | 94.951     | 94.991      | 0.0406  |

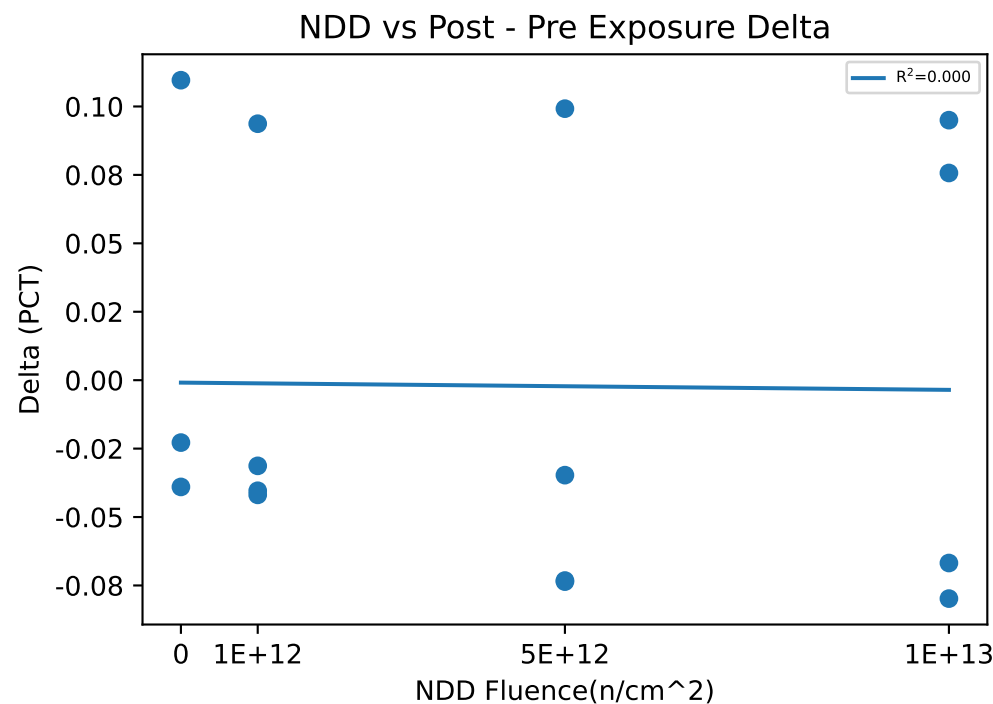
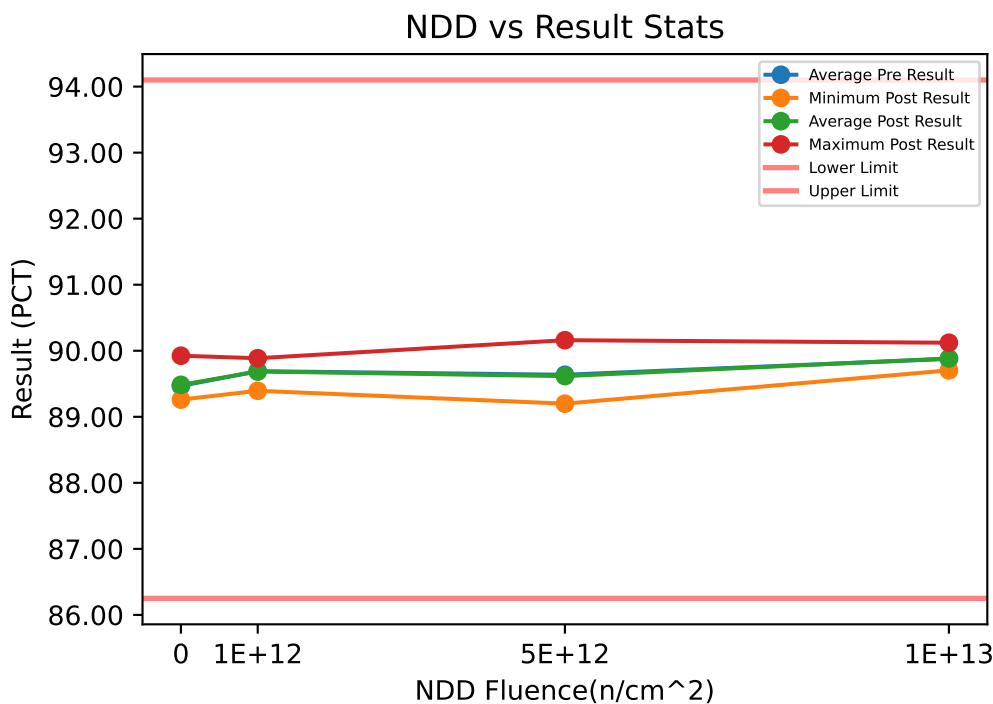
NDD vs Post - Pre Exposure Delta



Test Statistics (PCT)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 94.243           | 94.639           | 95.129           | 0.45037          | 94.521            | 94.713            | 95.088            | 0.32522           | -0.0404   | 0.074167  | 0.2864    | 0.18399   |
| 1e+12           | 94.437           | 94.825           | 95.166           | 0.3006           | 94.451            | 94.853            | 95.191            | 0.30916           | 0.011     | 0.028425  | 0.064     | 0.024464  |
| 5e+12           | 94.257           | 94.802           | 95.317           | 0.43326          | 94.192            | 94.699            | 95.313            | 0.46349           | -0.2273   | -0.10312  | -0.0039   | 0.094715  |
| 1e+13           | 94.818           | 95.022           | 95.262           | 0.18758          | 94.808            | 95.069            | 95.316            | 0.21869           | -0.0096   | 0.046775  | 0.1015    | 0.045725  |

Device Test: 71.4 POWER\_GOOD|//FALL\_THRESHOLD/1N8V//3/@V\_PG\_FALL



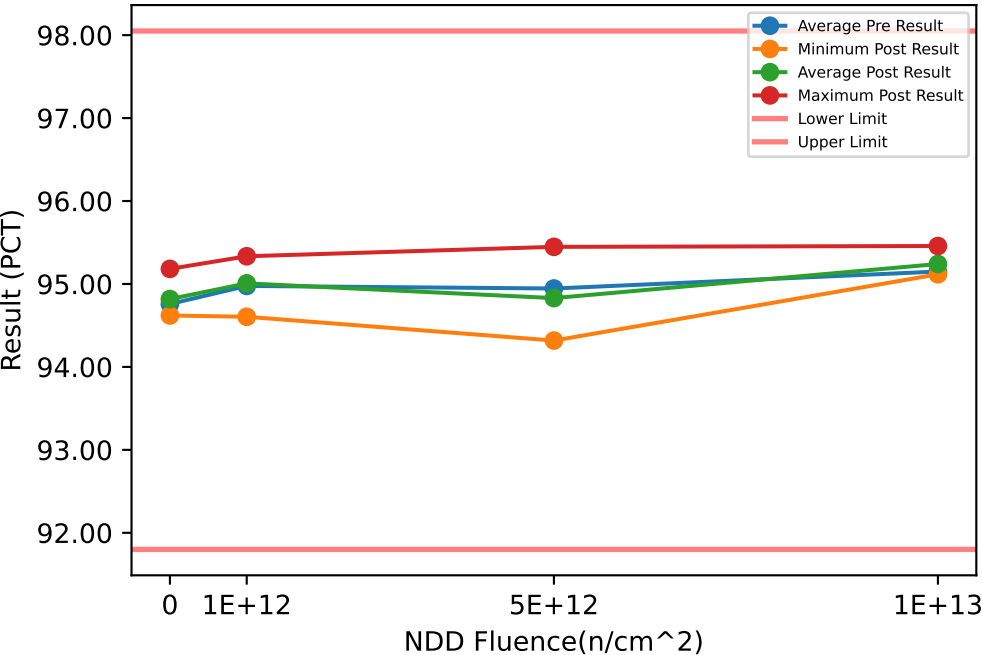
Test Results (Lower Limit = 86.25, Upper Limit = 94.10000000000001 (PCT))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 89.305     | 89.266      | -0.039  |
| 2        | 0               | CU2                 | 89.948     | 89.925      | -0.0228 |
| 3        | 0               | CU3                 | 89.15      | 89.26       | 0.1096  |
| 60       | 1e+12           | 1E12n/cm2           | 89.761     | 89.73       | -0.0313 |
| 61       | 1e+12           | 1E12n/cm2           | 89.793     | 89.887      | 0.0937  |
| 62       | 1e+12           | 1E12n/cm2           | 89.436     | 89.394      | -0.0419 |
| 63       | 1e+12           | 1E12n/cm2           | 89.773     | 89.733      | -0.0404 |
| 64       | 5e+12           | 5E12n/cm2           | 89.588     | 89.553      | -0.0347 |
| 65       | 5e+12           | 5E12n/cm2           | 90.061     | 90.16       | 0.0992  |
| 66       | 5e+12           | 5E12n/cm2           | 89.273     | 89.199      | -0.0736 |
| 67       | 5e+12           | 5E12n/cm2           | 89.624     | 89.551      | -0.0732 |
| 68       | 1e+13           | 1E13n/cm2           | 90.046     | 90.121      | 0.0757  |
| 69       | 1e+13           | 1E13n/cm2           | 89.763     | 89.858      | 0.095   |
| 70       | 1e+13           | 1E13n/cm2           | 89.931     | 89.851      | -0.0798 |
| 71       | 1e+13           | 1E13n/cm2           | 89.77      | 89.703      | -0.0668 |

Test Statistics (PCT)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 89.15            | 89.468           | 89.948           | 0.42263          | 89.26             | 89.484            | 89.925            | 0.38193           | -0.039    | 0.015933  | 0.1096    | 0.081521  |
| 1e+12           | 89.436           | 89.691           | 89.793           | 0.17053          | 89.394            | 89.686            | 89.887            | 0.208             | -0.0419   | -0.004975 | 0.0937    | 0.06595   |
| 5e+12           | 89.273           | 89.636           | 90.061           | 0.32394          | 89.199            | 89.616            | 90.16             | 0.39908           | -0.0736   | -0.020575 | 0.0992    | 0.081908  |
| 1e+13           | 89.763           | 89.877           | 90.046           | 0.1366           | 89.703            | 89.883            | 90.121            | 0.17408           | -0.0798   | 0.006025  | 0.095     | 0.092088  |

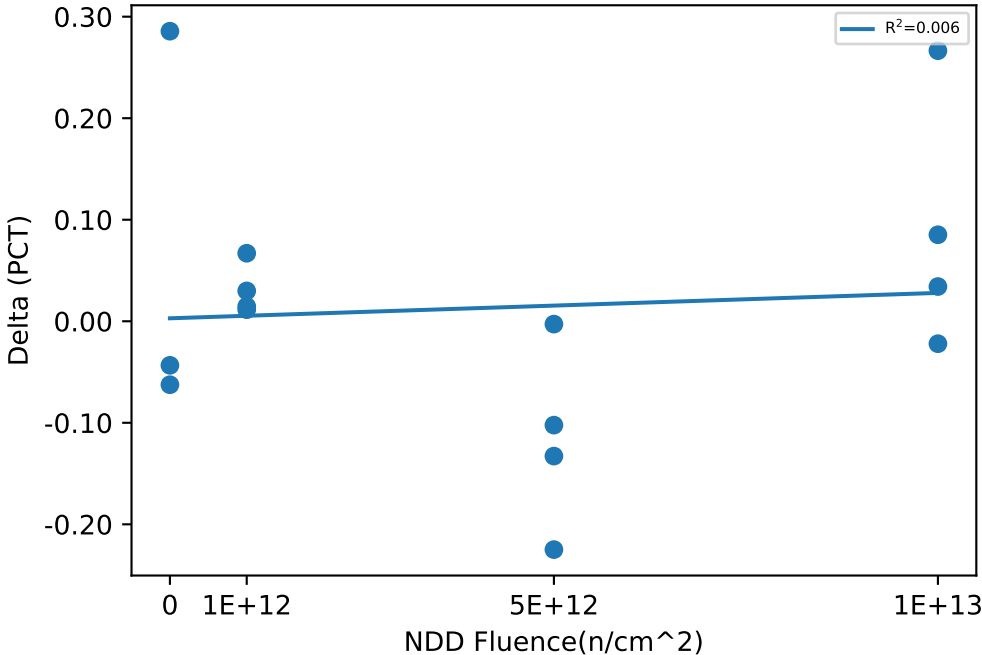
NDD vs Result Stats



Test Results (Lower Limit = 91.8, Upper Limit = 98.05 (PCT))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 94.663     | 94.62       | -0.0434 |
| 2        | 0               | CU2                 | 95.245     | 95.182      | -0.0625 |
| 3        | 0               | CU3                 | 94.367     | 94.653      | 0.2857  |
| 60       | 1e+12           | 1E12n/cm2           | 95.098     | 95.11       | 0.0114  |
| 61       | 1e+12           | 1E12n/cm2           | 95.267     | 95.334      | 0.067   |
| 62       | 1e+12           | 1E12n/cm2           | 94.575     | 94.605      | 0.0299  |
| 63       | 1e+12           | 1E12n/cm2           | 94.966     | 94.98       | 0.0147  |
| 64       | 5e+12           | 5E12n/cm2           | 94.955     | 94.822      | -0.1328 |
| 65       | 5e+12           | 5E12n/cm2           | 95.45      | 95.448      | -0.0028 |
| 66       | 5e+12           | 5E12n/cm2           | 94.42      | 94.318      | -0.1023 |
| 67       | 5e+12           | 5E12n/cm2           | 94.956     | 94.731      | -0.2249 |
| 68       | 1e+13           | 1E13n/cm2           | 95.373     | 95.458      | 0.0852  |
| 69       | 1e+13           | 1E13n/cm2           | 94.963     | 95.23       | 0.2665  |
| 70       | 1e+13           | 1E13n/cm2           | 95.181     | 95.159      | -0.0221 |
| 71       | 1e+13           | 1E13n/cm2           | 95.083     | 95.117      | 0.0342  |

NDD vs Post - Pre Exposure Delta

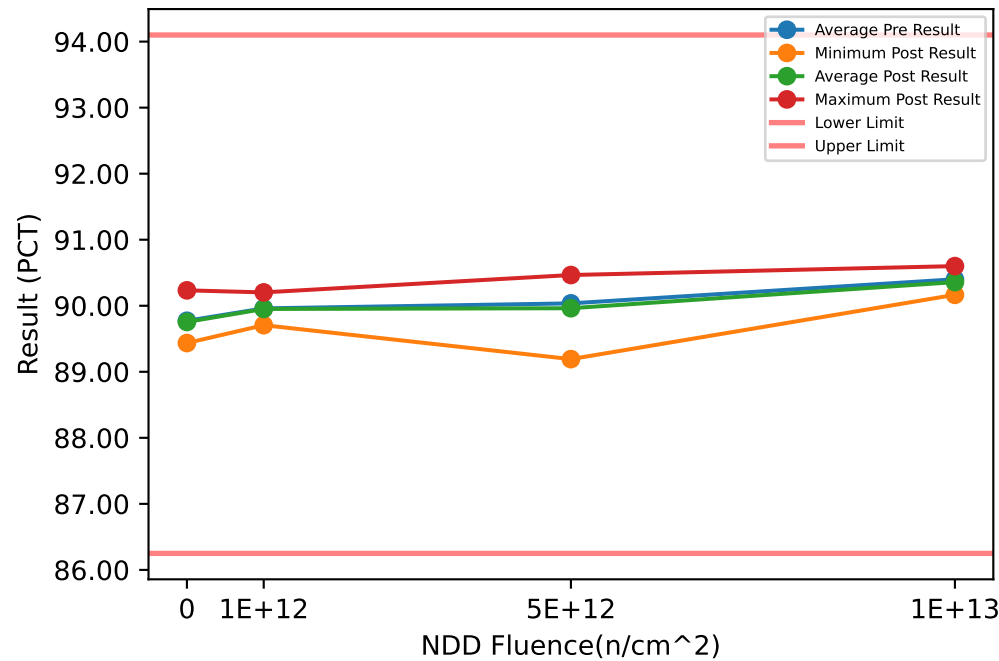


Test Statistics (PCT)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 94.367           | 94.758           | 95.245           | 0.44647          | 94.62             | 94.818            | 95.182            | 0.31551           | -0.0625   | 0.059933  | 0.2857    | 0.19575   |
| 1e+12           | 94.575           | 94.976           | 95.267           | 0.29484          | 94.605            | 95.007            | 95.334            | 0.30556           | 0.0114    | 0.03075   | 0.067     | 0.025474  |
| 5e+12           | 94.42            | 94.945           | 95.45            | 0.42078          | 94.318            | 94.83             | 95.448            | 0.46677           | -0.2249   | -0.1157   | -0.0028   | 0.091548  |
| 1e+13           | 94.963           | 95.15            | 95.373           | 0.17322          | 95.117            | 95.241            | 95.458            | 0.15191           | -0.0221   | 0.09095   | 0.2665    | 0.12497   |

Device Test: 71.7 POWER\_GOOD|//FALL\_THRESHOLD/1N8V//6.3/@V\_PG\_FALL

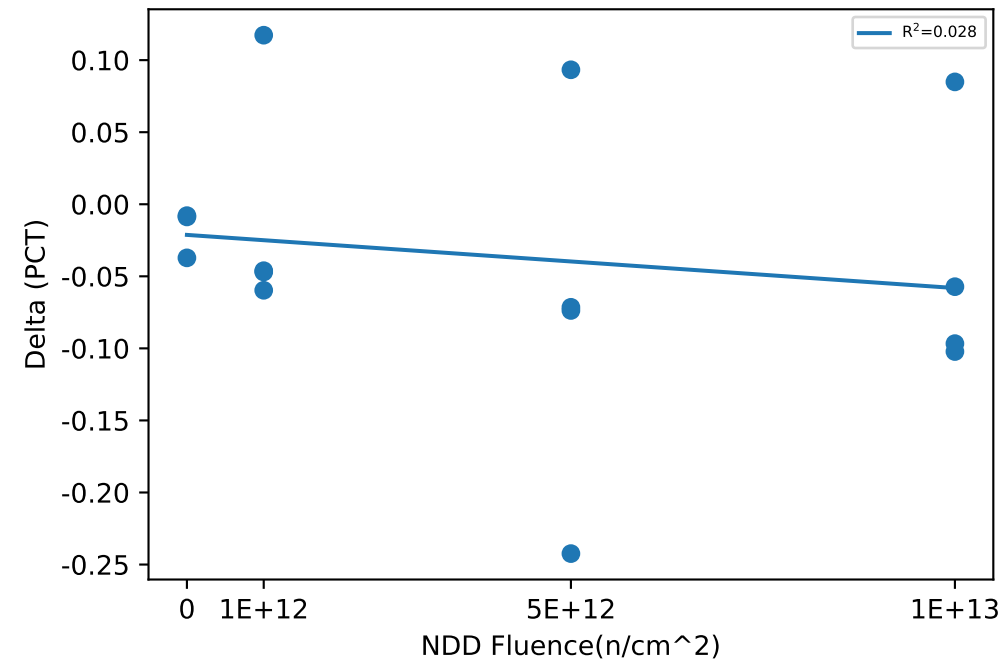
NDD vs Result Stats



Test Results (Lower Limit = 86.25, Upper Limit = 94.10000000000001 (PCT))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 89.444     | 89.435      | -0.0088 |
| 2        | 0               | CU2                 | 90.241     | 90.233      | -0.0079 |
| 3        | 0               | CU3                 | 89.632     | 89.595      | -0.0372 |
| 60       | 1e+12           | 1E12n/cm2           | 89.915     | 89.869      | -0.0461 |
| 61       | 1e+12           | 1E12n/cm2           | 90.085     | 90.202      | 0.1173  |
| 62       | 1e+12           | 1E12n/cm2           | 89.753     | 89.706      | -0.047  |
| 63       | 1e+12           | 1E12n/cm2           | 90.088     | 90.028      | -0.0597 |
| 64       | 5e+12           | 5E12n/cm2           | 90.076     | 90.169      | 0.0933  |
| 65       | 5e+12           | 5E12n/cm2           | 90.537     | 90.465      | -0.0715 |
| 66       | 5e+12           | 5E12n/cm2           | 89.434     | 89.192      | -0.2424 |
| 67       | 5e+12           | 5E12n/cm2           | 90.098     | 90.024      | -0.0737 |
| 68       | 1e+13           | 1E13n/cm2           | 90.515     | 90.6        | 0.0849  |
| 69       | 1e+13           | 1E13n/cm2           | 90.27      | 90.168      | -0.1022 |
| 70       | 1e+13           | 1E13n/cm2           | 90.556     | 90.498      | -0.0572 |
| 71       | 1e+13           | 1E13n/cm2           | 90.262     | 90.165      | -0.0967 |

NDD vs Post - Pre Exposure Delta

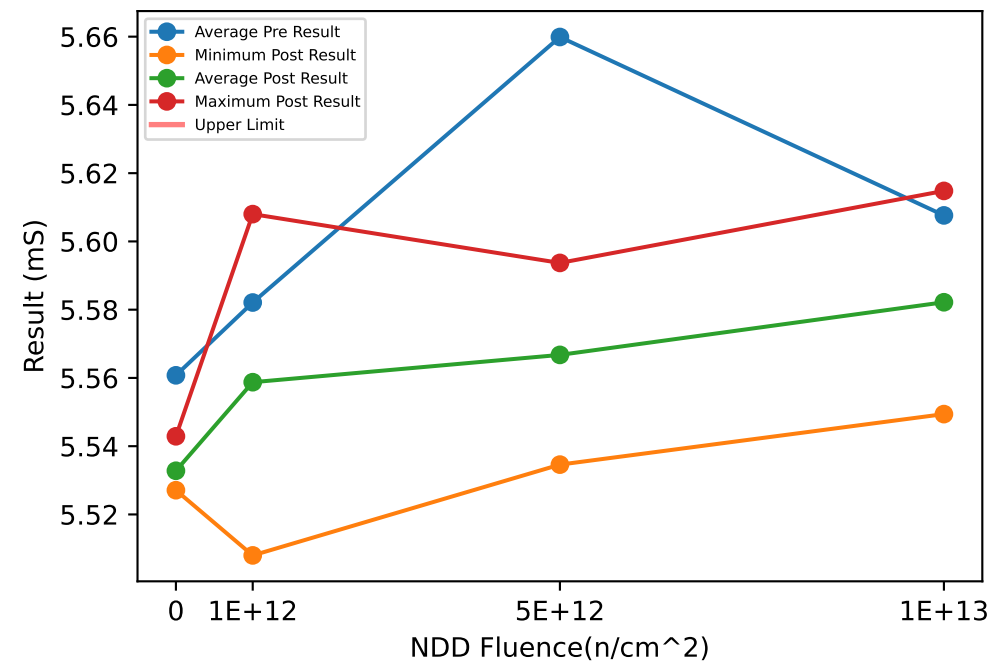


Test Statistics (PCT)

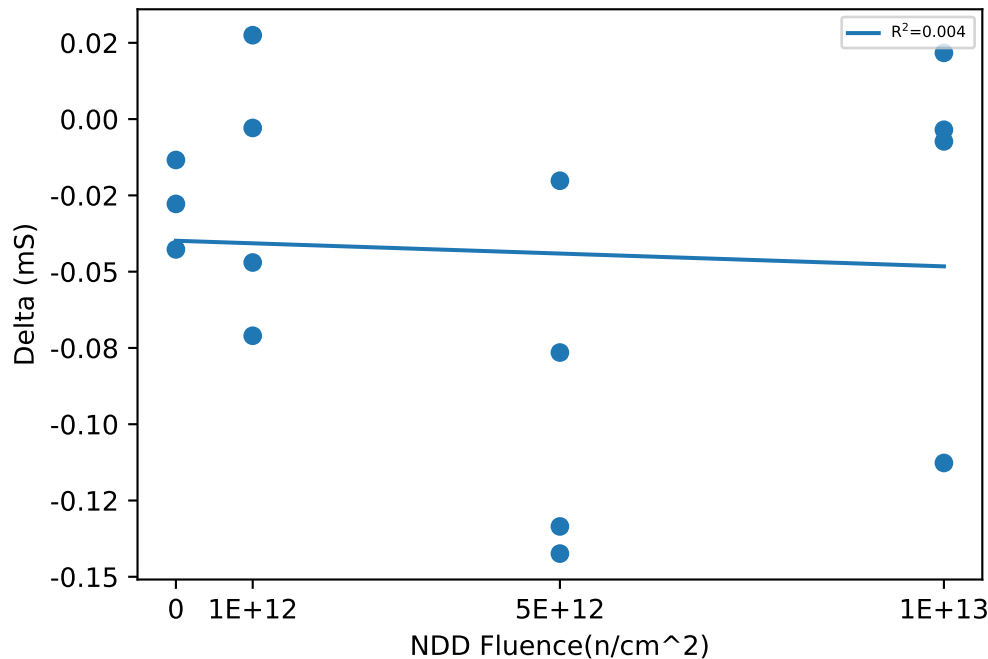
| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 89.444           | 89.772           | 90.241           | 0.41658          | 89.435            | 89.755            | 90.233            | 0.42217           | -0.0372   | -0.017967 | -0.0079   | 0.016663  |
| 1e+12           | 89.753           | 89.96            | 90.088           | 0.16013          | 89.706            | 89.951            | 90.202            | 0.21282           | -0.0597   | -0.008875 | 0.1173    | 0.084346  |
| 5e+12           | 89.434           | 90.036           | 90.537           | 0.45396          | 89.192            | 89.963            | 90.465            | 0.5456            | -0.2424   | -0.073575 | 0.0933    | 0.13706   |
| 1e+13           | 90.262           | 90.401           | 90.556           | 0.15649          | 90.165            | 90.358            | 90.6              | 0.22489           | -0.1022   | -0.0428   | 0.0849    | 0.087461  |

Device Test: 75.1 CPOUT|//DISCHARGE\_TIME///3/@I\_CP\_DISCHARGE

NDD vs Result Stats



NDD vs Post - Pre Exposure Delta



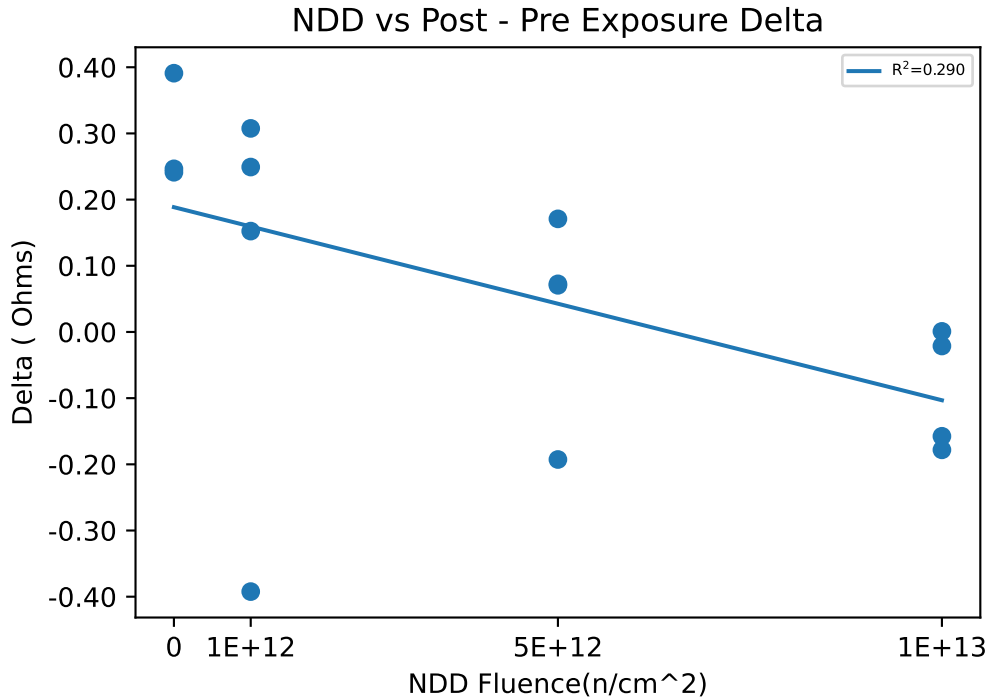
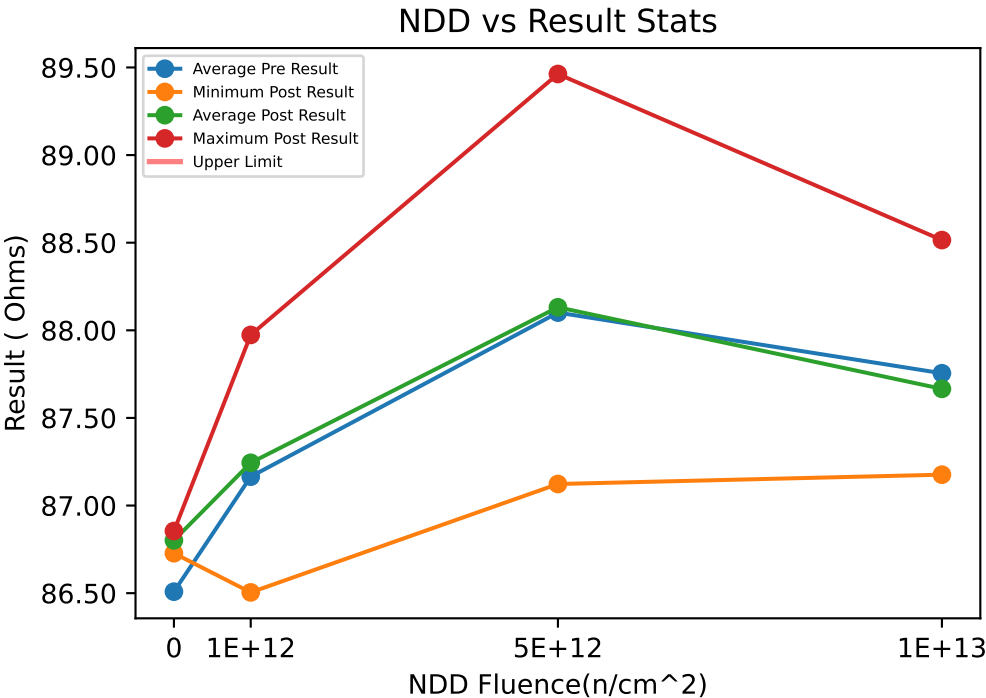
Test Results (No Limits Specified (mS))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 5.5562     | 5.5284      | -0.0278 |
| 2        | 0               | CU2                 | 5.5856     | 5.5429      | -0.0427 |
| 3        | 0               | CU3                 | 5.5405     | 5.5271      | -0.0134 |
| 60       | 1e+12           | 1E12n/cm2           | 5.5782     | 5.5312      | -0.047  |
| 61       | 1e+12           | 1E12n/cm2           | 5.5907     | 5.5878      | -0.0029 |
| 62       | 1e+12           | 1E12n/cm2           | 5.579      | 5.508       | -0.071  |
| 63       | 1e+12           | 1E12n/cm2           | 5.5805     | 5.608       | 0.0275  |
| 64       | 5e+12           | 5E12n/cm2           | 5.7361     | 5.5937      | -0.1424 |
| 65       | 5e+12           | 5E12n/cm2           | 5.6111     | 5.5346      | -0.0765 |
| 66       | 5e+12           | 5E12n/cm2           | 5.5687     | 5.5485      | -0.0202 |
| 67       | 5e+12           | 5E12n/cm2           | 5.7237     | 5.5902      | -0.1335 |
| 68       | 1e+13           | 1E13n/cm2           | 5.5921     | 5.5848      | -0.0073 |
| 69       | 1e+13           | 1E13n/cm2           | 5.5277     | 5.5494      | 0.0217  |
| 70       | 1e+13           | 1E13n/cm2           | 5.7275     | 5.6148      | -0.1127 |
| 71       | 1e+13           | 1E13n/cm2           | 5.5832     | 5.5797      | -0.0035 |

Test Statistics (mS)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 5.5405           | 5.5608           | 5.5856           | 0.022894         | 5.5271            | 5.5328            | 5.5429            | 0.008771          | -0.0427   | -0.027967 | -0.0134   | 0.014651  |
| 1e+12           | 5.5782           | 5.5821           | 5.5907           | 0.0058121        | 5.508             | 5.5587            | 5.608             | 0.046918          | -0.071    | -0.02335  | 0.0275    | 0.044098  |
| 5e+12           | 5.5687           | 5.6599           | 5.7361           | 0.082817         | 5.5346            | 5.5667            | 5.5937            | 0.029681          | -0.1424   | -0.09315  | -0.0202   | 0.056723  |
| 1e+13           | 5.5277           | 5.6076           | 5.7275           | 0.084844         | 5.5494            | 5.5822            | 5.6148            | 0.026781          | -0.1127   | -0.02545  | 0.0217    | 0.059573  |

Device Test: 75.2 CPOUT|//DISCHARGE\_RESISTANCE///3/@R\_CP\_DISCHARGE



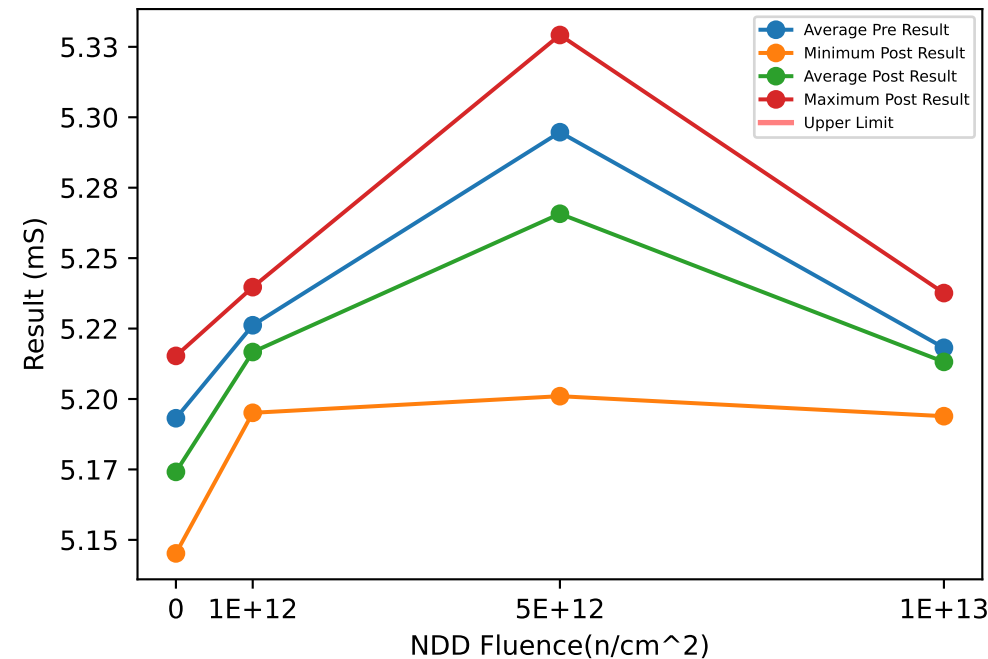
| Test Results (No Limits Specified ( Ohms)) |                 |                     |            |             |         |
|--------------------------------------------|-----------------|---------------------|------------|-------------|---------|
| Serial #                                   | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
| 1                                          | 0               | CU1                 | 86.431     | 86.822      | 0.391   |
| 2                                          | 0               | CU2                 | 86.481     | 86.728      | 0.2465  |
| 3                                          | 0               | CU3                 | 86.613     | 86.855      | 0.2413  |
| 60                                         | 1e+12           | 1E12n/cm2           | 86.255     | 86.504      | 0.2492  |
| 61                                         | 1e+12           | 1E12n/cm2           | 87.355     | 87.662      | 0.3076  |
| 62                                         | 1e+12           | 1E12n/cm2           | 87.228     | 86.836      | -0.3923 |
| 63                                         | 1e+12           | 1E12n/cm2           | 87.821     | 87.974      | 0.1524  |
| 64                                         | 5e+12           | 5E12n/cm2           | 88.956     | 88.763      | -0.1927 |
| 65                                         | 5e+12           | 5E12n/cm2           | 87.052     | 87.123      | 0.0705  |
| 66                                         | 5e+12           | 5E12n/cm2           | 87.006     | 87.177      | 0.1709  |
| 67                                         | 5e+12           | 5E12n/cm2           | 89.39      | 89.463      | 0.0727  |
| 68                                         | 1e+13           | 1E13n/cm2           | 87.197     | 87.176      | -0.0212 |
| 69                                         | 1e+13           | 1E13n/cm2           | 87.487     | 87.329      | -0.1576 |
| 70                                         | 1e+13           | 1E13n/cm2           | 88.693     | 88.515      | -0.1781 |
| 71                                         | 1e+13           | 1E13n/cm2           | 87.643     | 87.644      | 0.0009  |

Test Statistics ( Ohms)

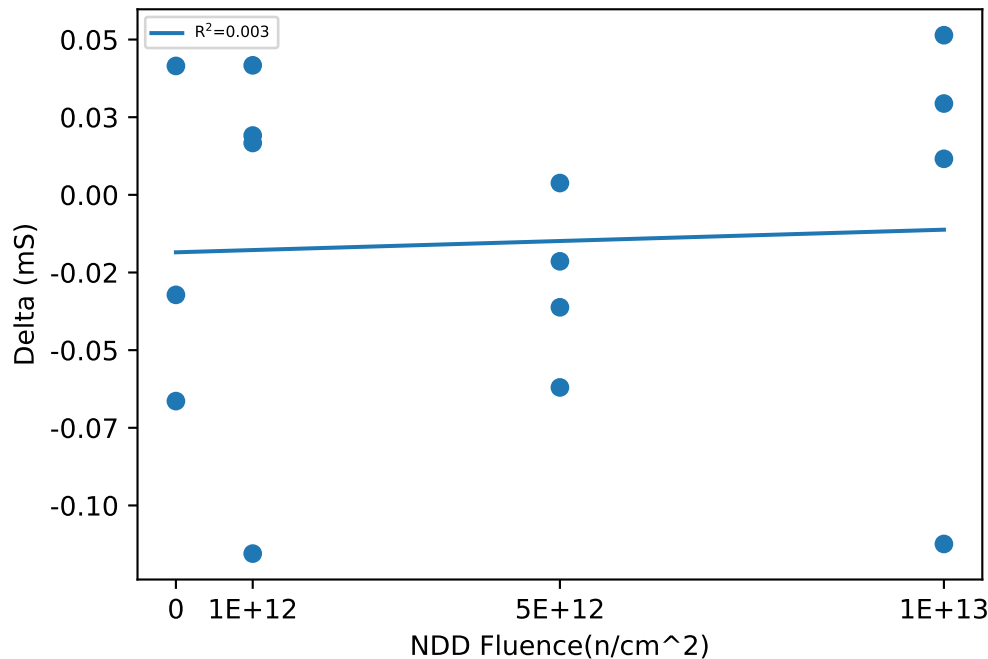
| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 86.431           | 86.509           | 86.613           | 0.094164         | 86.728            | 86.801            | 86.855            | 0.065719          | 0.2413    | 0.29293   | 0.391     | 0.084968  |
| 1e+12           | 86.255           | 87.165           | 87.821           | 0.65787          | 86.504            | 87.244            | 87.974            | 0.68825           | -0.3923   | 0.079225  | 0.3076    | 0.3208    |
| 5e+12           | 87.006           | 88.101           | 89.39            | 1.2503           | 87.123            | 88.131            | 89.463            | 1.1688            | -0.1927   | 0.03035   | 0.1709    | 0.1559    |
| 1e+13           | 87.197           | 87.755           | 88.693           | 0.65204          | 87.176            | 87.666            | 88.515            | 0.59851           | -0.1781   | -0.089    | 0.0009    | 0.091876  |

Device Test: 75.3 CPOUT|//DISCHARGE\_TIME///6.3/@I\_CP\_DISCHARGE

NDD vs Result Stats



NDD vs Post - Pre Exposure Delta



Test Results (No Limits Specified (mS))

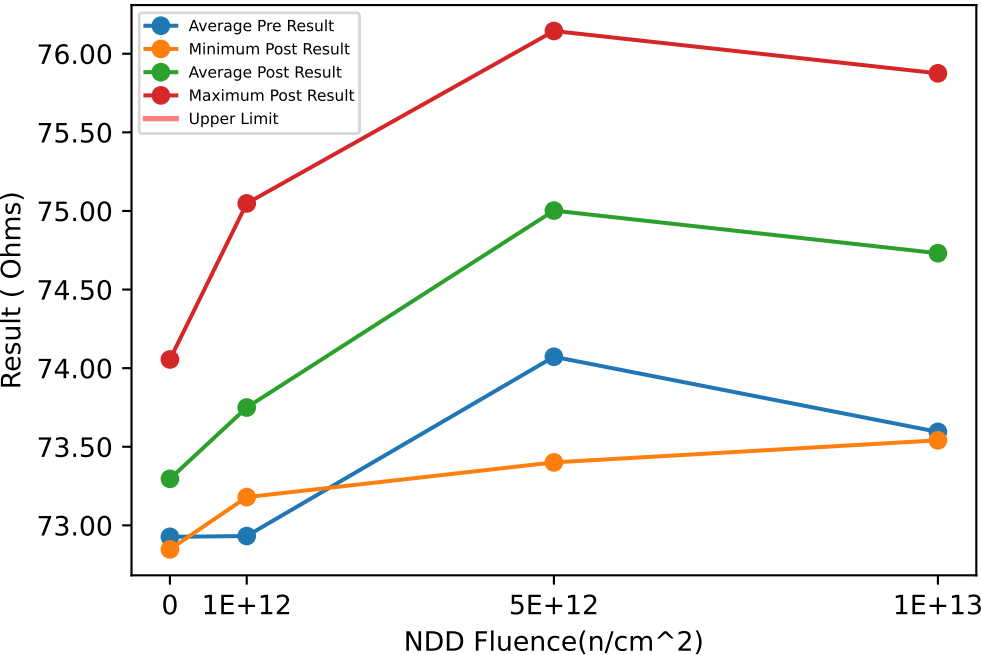
| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta   |
|----------|-----------------|---------------------|------------|-------------|---------|
| 1        | 0               | CU1                 | 5.2116     | 5.1452      | -0.0664 |
| 2        | 0               | CU2                 | 5.1941     | 5.1619      | -0.0322 |
| 3        | 0               | CU3                 | 5.1738     | 5.2153      | 0.0415  |
| 60       | 1e+12           | 1E12n/cm2           | 5.1784     | 5.1951      | 0.0167  |
| 61       | 1e+12           | 1E12n/cm2           | 5.2108     | 5.2299      | 0.0191  |
| 62       | 1e+12           | 1E12n/cm2           | 5.1603     | 5.202       | 0.0417  |
| 63       | 1e+12           | 1E12n/cm2           | 5.3552     | 5.2397      | -0.1155 |
| 64       | 5e+12           | 5E12n/cm2           | 5.3647     | 5.3285      | -0.0362 |
| 65       | 5e+12           | 5E12n/cm2           | 5.2257     | 5.2043      | -0.0214 |
| 66       | 5e+12           | 5E12n/cm2           | 5.1972     | 5.201       | 0.0038  |
| 67       | 5e+12           | 5E12n/cm2           | 5.3912     | 5.3292      | -0.062  |
| 68       | 1e+13           | 1E13n/cm2           | 5.2004     | 5.212       | 0.0116  |
| 69       | 1e+13           | 1E13n/cm2           | 5.1425     | 5.1939      | 0.0514  |
| 70       | 1e+13           | 1E13n/cm2           | 5.35       | 5.2376      | -0.1124 |
| 71       | 1e+13           | 1E13n/cm2           | 5.1798     | 5.2092      | 0.0294  |

Test Statistics (mS)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 5.1738           | 5.1932           | 5.2116           | 0.018917         | 5.1452            | 5.1741            | 5.2153            | 0.036616          | -0.0664   | -0.019033 | 0.0415    | 0.055142  |
| 1e+12           | 5.1603           | 5.2262           | 5.3552           | 0.088517         | 5.1951            | 5.2167            | 5.2397            | 0.021493          | -0.1155   | -0.0095   | 0.0417    | 0.071558  |
| 5e+12           | 5.1972           | 5.2947           | 5.3912           | 0.097433         | 5.201             | 5.2657            | 5.3292            | 0.072875          | -0.062    | -0.02895  | 0.0038    | 0.027534  |
| 1e+13           | 5.1425           | 5.2182           | 5.35             | 0.091092         | 5.1939            | 5.2132            | 5.2376            | 0.018123          | -0.1124   | -0.005    | 0.0514    | 0.073427  |

Device Test: 75.4 CPOUT|//DISCHARGE\_RESISTANCE///6.3/@R\_CP\_DISCHARGE

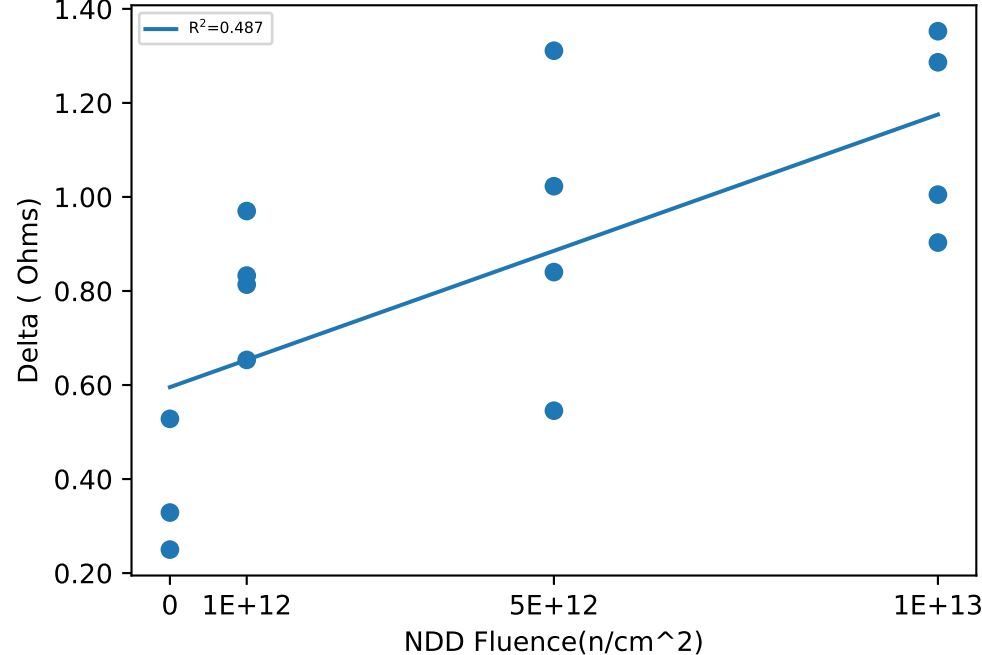
NDD vs Result Stats



Test Results (No Limits Specified ( Ohms))

| Serial # | Fluence(n/cm^2) | Exposure Conditions | Pre Result | Post Result | Delta  |
|----------|-----------------|---------------------|------------|-------------|--------|
| 1        | 0               | CU1                 | 72.657     | 72.986      | 0.3288 |
| 2        | 0               | CU2                 | 72.319     | 72.847      | 0.5281 |
| 3        | 0               | CU3                 | 73.805     | 74.055      | 0.25   |
| 60       | 1e+12           | 1E12n/cm2           | 72.366     | 73.18       | 0.8135 |
| 61       | 1e+12           | 1E12n/cm2           | 72.342     | 73.312      | 0.97   |
| 62       | 1e+12           | 1E12n/cm2           | 72.626     | 73.459      | 0.8328 |
| 63       | 1e+12           | 1E12n/cm2           | 74.394     | 75.048      | 0.6534 |
| 64       | 5e+12           | 5E12n/cm2           | 74.802     | 75.825      | 1.0228 |
| 65       | 5e+12           | 5E12n/cm2           | 72.09      | 73.4        | 1.311  |
| 66       | 5e+12           | 5E12n/cm2           | 73.799     | 74.639      | 0.8402 |
| 67       | 5e+12           | 5E12n/cm2           | 75.599     | 76.145      | 0.5454 |
| 68       | 1e+13           | 1E13n/cm2           | 73.651     | 74.554      | 0.903  |
| 69       | 1e+13           | 1E13n/cm2           | 72.255     | 73.541      | 1.2864 |
| 70       | 1e+13           | 1E13n/cm2           | 74.523     | 75.875      | 1.3525 |
| 71       | 1e+13           | 1E13n/cm2           | 73.95      | 74.955      | 1.0049 |

NDD vs Post - Pre Exposure Delta



Test Statistics ( Ohms)

| Fluence(n/cm^2) | Pre Exposure Min | Pre Exposure Avg | Pre Exposure Max | Pre Exposure Std | Post Exposure Min | Post Exposure Avg | Post Exposure Max | Post Exposure Std | Min Delta | Avg Delta | Max Delta | Std Delta |
|-----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|-----------|-----------|
| 0               | 72.319           | 72.927           | 73.805           | 0.77911          | 72.847            | 73.296            | 74.055            | 0.66119           | 0.25      | 0.36897   | 0.5281    | 0.14334   |
| 1e+12           | 72.342           | 72.932           | 74.394           | 0.98331          | 73.18             | 73.75             | 75.048            | 0.87299           | 0.6534    | 0.81742   | 0.97      | 0.12966   |
| 5e+12           | 72.09            | 74.072           | 75.599           | 1.5133           | 73.4              | 75.002            | 76.145            | 1.2489            | 0.5454    | 0.92985   | 1.311     | 0.32133   |
| 1e+13           | 72.255           | 73.595           | 74.523           | 0.96382          | 73.541            | 74.731            | 75.875            | 0.96734           | 0.903     | 1.1367    | 1.3525    | 0.21677   |

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Last updated 10/2025