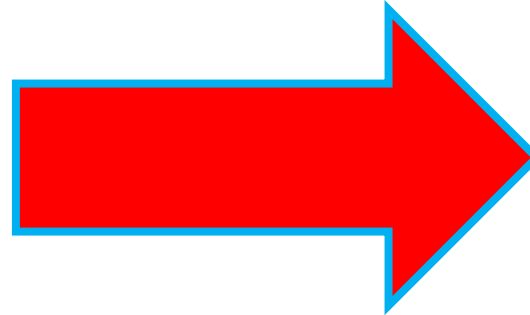


HGC_CERN_SENSOR_IV_SUMRY old and Proposed Columns

Old Columns

CONDITION_DATA_SET_ID
CRNTRATIO_800_TO_600V
GRADE
NUM_BAD_ADJ_CELLS
NUM_BAD_CELLS
PASS
RECORD_ID
TOT_CURNT_NANOAMP_600V
TOT_CURNT_NANOAMP_800V



Columns we proposed (which now work)

CONDITION_DATA_SET_ID
CRNTRATIO_800_TO_600V
CURNT_600V_LT_100UA
NUM_BAD_ADJ_CELLS
NUM_BAD_ADJ_CELLS_PASS
NUM_BAD_CELLS
LIST_BAD_CELLS
NUM_BAD_CELLS_PASS
PASS
RECORD_ID
TOT_CURNT_NANOAMP_600V
TOT_CURNT_NANOAMP_800V

Notes:

- Remove GRADES because currently SI testing does not assign grades
- LIST_BAD_CELLS: it is critical to keep track of the bad censor cells in the DB – this could just be a comma-separated list of integers
- To see the proposed new XML template (which could be derived from the column names above), see next page

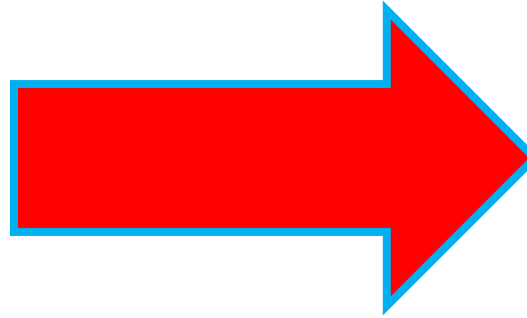
HGC_CERN_SENSOR_IV_SUMRY New XML template

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ROOT xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <HEADER>
    <TYPE>
      <EXTENSION_TABLE_NAME>HGC_CERN_SENSOR_IV_SUMRY</EXTENSION_TABLE_NAME>
      <NAME>HGC CERN Sensor IV Summary</NAME>
    </TYPE>
    <RUN>
      <RUN_NAME>Your Run Name</RUN_NAME>
      <!-- Enter your timestamp -->
      <RUN_BEGIN_TIMESTAMP>2018-05-14 00:00:00</RUN_BEGIN_TIMESTAMP>
      <RUN_END_TIMESTAMP>2018-05-14 00:00:00</RUN_END_TIMESTAMP>
      <INITIATED_BY_USER>Your Name</INITIATED_BY_USER>
      <LOCATION>CERN</LOCATION>
      <COMMENT_DESCRIPTION>Your Comments</COMMENT_DESCRIPTION>
    </RUN>
  </HEADER>
  <DATA_SET>
    <PART>
      <KIND_OF_PART>120um Si Sensor HD Full</KIND_OF_PART>
      <SERIAL_NUMBER>XXXXXXXXXXXXXXXXXXXX</SERIAL_NUMBER>
    </PART>
    </PART>
    <DATA>
      <TOT_CURNT_NANOAMP_600V>7.609905</TOT_CURNT_NANOAMP_600V>
      <TOT_CURNT_NANOAMP_800V>0.01653122</TOT_CURNT_NANOAMP_800V>
      <CURNT_600V_LESSTHAN_100uA>PASSED</CURNT_600V_LESSTHAN_100uA>
      <CRNTRATIO_800_TO_600>PASSED< CRNTRATIO_800_TO_600 >
      <NUM_BAD_CELLS>3</NUM_BAD_CELLS>
      <LIST_BAD_CELLS>25,100,112</LIST_BAD_CELLS>
      <NUM_BAD_CELLS_PASS>PASSED</NUM_BAD_CELLS_PASS>
      <PASS>N</PASS>
      <NUM_BAD_ADJ_CELLS>5</NUM_BAD_ADJ_CELLS>
      <NUM_BAD_ADJ_CELLS_PASS>PASS</NUM_BAD_ADJ_CELLS_PASS>
    </DATA>
  </DATA_SET>
</ROOT>
```

HGC_CERN_SENSOR_CV_SUMRY old and Proposed Columns

Current Columns

CONDITION_DATA_SET_ID
DEPL_UNIF_VOLTS
DEPL_VOLTS
GRADE
MAX_DEPL_VOLTS
PASS
RECORD_ID
SNSR_THICKNESS
SNSR_THICKNESS_UNIF



Columns we proposed (which now work)

CONDITION_DATA_SET_ID
DEPL_UNIF_VOLTS
DEPL_VOLTS_PASS
DEPL_VOLTS_UNIF_PASS
C_INT_PASS
DEPL_VOLTS
MAX_DEPL_VOLTS
PASS
RECORD_ID
SNSR_THICKNESS
SNSR_THICKNESS_UNIF
SNSR_THICKNESS_UNIF_PASS

Notes:

- Remove GRADES because currently SI testing does not assign grades
- To see the proposed new xml template (which could be derived from the column names above), see next page

HGC_CERN_SENSOR_CV_SUMRY Proposed XML template

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ROOT xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <HEADER>
    <TYPE>
      <EXTENSION_TABLE_NAME>HGC_CERN_SENSOR_CV_SUMRY</EXTENSION_TABLE_NAME>
      <NAME>HGC CERN Sensor CV Summary</NAME>
    </TYPE>

    <RUN>
      <RUN_NAME>Your Run Name</RUN_NAME>
      <!-- Enter your timestamp -->
      <RUN_BEGIN_TIMESTAMP>2018-05-14 00:00:00</RUN_BEGIN_TIMESTAMP>
      <RUN_END_TIMESTAMP>2018-05-14 00:00:00</RUN_END_TIMESTAMP>
      <INITIATED_BY_USER>Your Name</INITIATED_BY_USER>
      <LOCATION>CERN</LOCATION>
      <COMMENT_DESCRIPTION>Your Comments</COMMENT_DESCRIPTION>
    </RUN>
  </HEADER>

  <DATA_SET>
    <PART>
      <KIND_OF_PART>120um Si Sensor HD Full</KIND_OF_PART>
      <SERIAL_NUMBER>XXXXXXXXXXXXXXXXXXXX</SERIAL_NUMBER>
    </PART>
    <DATA>
      <SNSR_THCKNESS>120</SNSR_THCKNESS>
      <DEPL_VOLTS>200</DEPL_VOLTS>
      <MAX_DEPL_VOLTS>250</MAX_DEPL_VOLTS>
      <DEPL_UNIF_VOLTS>200</DEPL_UNIF_VOLTS>
      <SNSR_THKNES_UNIF>120</SNSR_THKNES_UNIF>
      <DEPL_VOLTS_PASS>PASSED</DEPL_VOLTS_PASS>
      <DEPL_VOLTS_UNIF_PASS>PASSED</DEPL_VOLTS_UNIF_PASS>
      <C_INT_PASS>PASSED</C_INT_PASS>
      <SNSR_THKNES_UNIF_PASS>PASSED</SNSR_THKNES_UNIF_PASS>
      <PASS>PASSED</PASS>
    </DATA>
  </DATA_SET>
</ROOT>
```

CV Grading of the sensor

<DEPL_VOLTS>284</DEPL_VOLTS>

<MAX_DEPL_VOLTS>370</MAX_DEPL_VOLTS>

- Sensor has been graded with checksCollectionID 1.
- Global characteristics using FULL cells only:

- Full depletion voltage $V_{dep} = 284.0$ V calculated as the median of depletion voltages across cells, after removing outliers outside quantile 16-84%.

- $V_{dep} < 370$ V or sensor of assumed thickness of 300 μm **Passed**

<DEPL_VOLTS_PASS>PASS</DEPL_VOLTS_PASS>

<DEPL_UNIF_VOLTS>0.2</DEPL_UNIF_VOLTS>

- Variation across sensor $\Delta V_{dep} = 0.2$ %

- $\Delta V_{dep} \leq$ Maximum variation across sensor of $\pm 10\%$ for sensor of $V_{dep} = 284.0$ V **Passed**

<SNSR_THCKNESS>300</SNSR_THCKNESS>

- Per-pad characteristics using FULL cells only:

- $C_{meas_mean} = 41.631$ pF, computed as the measured open corrected serial capacitance averaged over cells

<DEPL_VOLTS_PASS>PASS</DEPL_VOLTS_PASS>

- Thickness uniformity across sensor using FULL cells only:

- Relative thickness variation $\Delta thickness = 0.2$ % $< 10 / 300$ **Passed**

<DEPL_UNIF_VOLTS>0.2</DEPL_UNIF_VOLTS>

Sensor has **PASSED** the requirements.

<SNSR_THKNES_UNIF_PASS>PASSED</SNSR_THKNES_UNIF_PASS>

<SNSR_THKNES_UNIF>0.2</SNSR_THKNES_UNIF>