

# Compact XML for the CalorimeterStack

here is the compact XML description for a simple 100 layer W-Scint stack

```
<lccdd xmlns:compact="http://www.lcsim.org/schemas/compact/1.0"
  xmlns:xs="http://www.w3.org/2001/XMLSchema-instance"
  xs:noNamespaceSchemaLocation="http://www.lcsim.org/schemas/compact/1.0/compact.xsd">

  <info name="clischcalstack"
    title="hcal stack for CLIC leakage tests"
    author="Marcel Stanitzki"
    url="NONE"
    status="development"
    version="$Id: compact.xml,v 1.1 2007/09/17 22:10:42 lima Exp $">
</info>

<define>

  <constant name="cm" value="10"/>

  <!-- world -->
  <constant name="world_side" value="5000*cm" />
  <constant name="world_x" value="world_side" />
  <constant name="world_y" value="world_side" />
  <constant name="world_z" value="world_side" />

  <!-- tracking region -->
  <constant name="tracking_region_radius" value="126.5*cm"/>
  <constant name="tracking_region_zmax" value="100.*cm"/>

</define>

<materials>
  <material name="TungstenDens23">
    <D value="17.7" unit="g/cm3"/>
    <fraction n="0.925" ref="W"/>
    <fraction n="0.066" ref="Ni"/>
    <fraction n="0.009" ref="Fe"/>
  </material>
  <material name="TungstenDens24">
    <D value="17.8" unit="g/cm3"/>
    <fraction n="0.93" ref="W"/>
    <fraction n="0.061" ref="Ni"/>
    <fraction n="0.009" ref="Fe"/>
  </material>
  <material name="TungstenDens25">
    <D value="18.2" unit="g/cm3"/>
    <fraction n="0.950" ref="W"/>
    <fraction n="0.044" ref="Ni"/>
    <fraction n="0.006" ref="Fe"/>
  </material>
</materials>

<detectors>
  <detector id="1" name="HCAL" type="TestBeamCalorimeter" readout="HCALCalorimeterHits" insideTrackingVolume="false">
    <dimensions x="100.0 * cm" y="100.0 * cm" />
    <position z="3500" />
    <layer repeat="100">
      <slice material="TungstenDens24" thickness="2.0*cm" />
      <slice material="Polystyrene" thickness="0.50*cm" sensitive="yes" />
      <slice material="G10" thickness="0.25*cm" />
    </layer>
  </detector>
</detectors>
```

```
<!-- Sensitive Detector readout segmentation -->
<readouts>
  <readout name="HCALCalorimeterHits">
    <segmentation type="GridXYZ" gridSizeX="1.0*cm" gridSizeY="1.0*cm" />
    <id>system:8,layer:16,barrel:3,x:32:-16,y:-16</id>
  </readout>
</readouts>

<fields>
</fields>
</lccdd>
```

This derives from TBCern1006\_01 made by Jeremy

A few important things to note

1. There is tracking region, where the stack should not get into
2. All coordinates refer to the center, so placing e.g. z-200cm with a 100cm deep stack, means, it actually extends from 150 cm to 250 cm
3. When reading back the layer number, they are inverted (bug report has been made), so the layer closest to the beam is e.g layer 100 in a 100 layer stack