

# SLAC Test Box - Design and Instrumentation

## CERN SR1 Setup

### Requirements

|                                                            |                                                |
|------------------------------------------------------------|------------------------------------------------|
|                                                            |                                                |
| Number of Local Supports to accommodate                    | One Stave + One Ring                           |
| Maximum Dew Point                                          | -60 C                                          |
| Light tightness                                            | any?                                           |
| Electrical feed-through to connect two LS at the same time | Two independent or one with internal split box |
| Cooling feed-through for cold CO2 (-35C) hoses             | One in, one out                                |
| Environmental sensors w/ interlock                         | Humidity, Temperature, pressure                |
| LS Interlocks                                              | <a href="#">Interlock</a>                      |

### Instruments

| Description          | Scope         | Make |                                                                                                                                    |
|----------------------|---------------|------|------------------------------------------------------------------------------------------------------------------------------------|
| Infrared camera      | Thermal QC    | FLIR | We expect to measure the sensor temperature in the range of -35 to RT. The operating environment is ~ -10 C                        |
| Radioactive Source   | Electrical QC | SLAC | Define type and Intensity. We need envelope of containment box and requirement for the handling and operation                      |
| Laser Interferometer | Mechanical QC | STIL | Optical Pen - STIL OP10000 + CCS PRIMA <a href="http://point.stil-sensors.com/?lang=EN">http://point.stil-sensors.com/?lang=EN</a> |

QC test (Validation and or Verification)...this link eventually to the QA/QC documents and the requirements document

|                               |                                                                     |  |
|-------------------------------|---------------------------------------------------------------------|--|
|                               |                                                                     |  |
| Thermal performances          | Thermal Figure of Merit; Temperature uniformity on Module or Heater |  |
| Thermo-mechanical Deformation | Deformation of the LS under the effect of the cooling               |  |
| Electrical I                  | Power Distribution                                                  |  |
| Electrical II                 | data transmission                                                   |  |
| Electrical III                | 1. of dead channels                                                 |  |