

Readout/control electronics modules for light system

In total, we have to provide the readout for 384 SiPM channels (192 for LCM and 192 - ArcLight).

- 1. We are going to use 7 ADC VME modules + 1 VME trigger unit so we require 1 VME crate and 1 19" rack.**
- 2. 8 Programmable Gain Amplifiers (PGA) pre-Amplifiers units 220x147x100 mm which are placed close (<1m) to main cryostat vessel.**
- 3. 4 modules of custom made power supply based on DACs or 8 CAEN WA7040ANXAA4 - A7040AN modules with 48 channels/each + SYx527LC mainframe. We will make a decision after the prototype tests at Bern Uni.**

Requirements for the light system

- **DC:** PGA: 90 A +5V, 7.5A -5V
cold amps: +/- 5V 4A
ADCs: 4.5A/per ADC - 5V, 100mA/per ADC - 3.3V
- **AC:** 4 outlets - 220V 10A for power supply units
3 outlets - 110V for DAQ PC, laptops
- 1 VME crate - 8 free slots and 19" rack
in case of CAEN PS for SIPMs: 8 CAEN CAEN WA7040ANXAA4
- A7040AN modules with 48 channels/each + SYx527LC
mainframe.
- 10-port 10Gbps switch with SFP+ for ADC readout, 10Gbps
PCI-e with SFP+ (local network between DAQ PC and ADCs)
- DAQ server: PC (optically decoupled from ADC rack)
- Cabling, connectors: 64 FCS8-20-01-L-S-A-TR connectors on
both sides (cool and warm) of the flange;
120 m of 3M-170034 ribbon cable.
- PGA amplifiers are at 1m distance from the Vessel flange
VME crate with ADCs is at 7.5m from PGA amplifier units