

Status of HCal project

Brian Quinn

Oct. 30/2018

Scope:

Production of 12 X 24 module hadron calorimeter array

with:

Subassembly module supports / calorimeter support / gantry /
motion & positioning system

Pulser calibration system

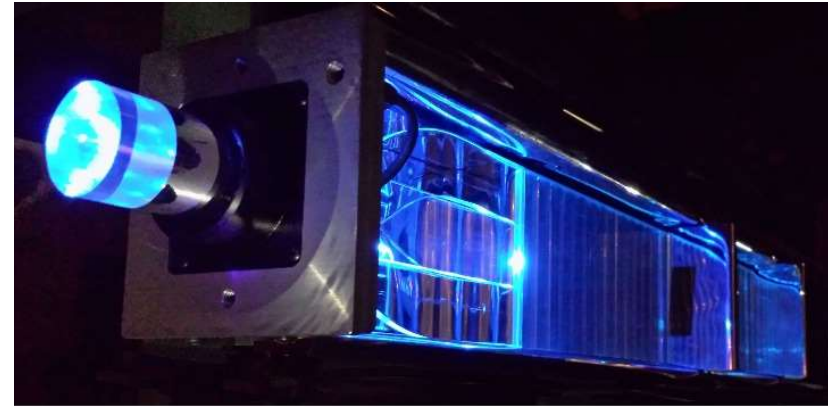
Calibration of: relative QE, light-collection,
and gain vs. HV for each module,

Software

(Next talk: HV and DAQ)

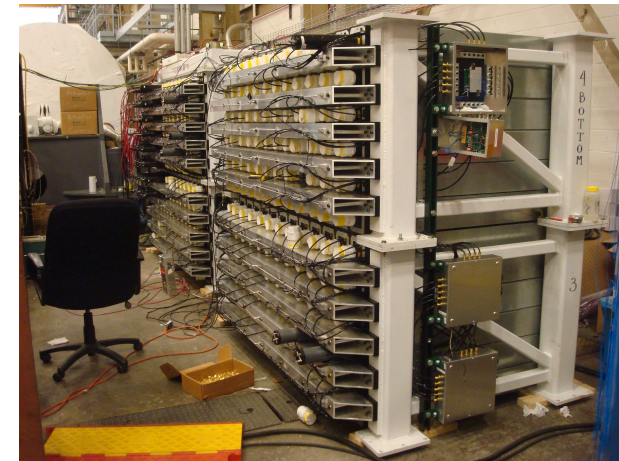
Completed:

Design/production of 288
(+4 spare) modules
(Final shipment to JLab, April 2018)



Design, construction, loading of subassemblies
(Completed May 2018)

Design, development, installation of pulser system
(Installed June-August 2018)



Modification of 100 bases/housings for XP 2282 PMT's
(Completed Oct. 2018 bring to JLab Nov.) (200 for XP 2262 ready)

Tasks to complete

Measurement of relative QE of all tubes

Calibration of light-yield of all fibers

Installation of tubes/bases on modules (orientation, optical grease?)

Replacement of one module ?

Calibration of gain vs. HV for all PMTs

Characterization of yield/light-collection of each module

Final design/construction of gantry

Design/construction of HCal support/positioning system

Cosmic testing

Event display / signal monitoring (software)

Pulser-based calibration/monitoring system (software)

Cluster-finding (software)

Hall engineering and design work

Gantry

2019? / JLab

Support/positioning system

2019? / JLab

Replace module ?

Test / CMU postdoc spring '19

Replace (if necessary & practical)

Summer '19 / Brian, tech Eric Day
(in consultation with Whit, Jessie)

Timeline/workforce

HCal Modules

Final shipment April 2018

Subassemblies

Loaded May 2018

Pulser system

Installed summer 2018

Housings for XP 2282

Completed Oct. 2018 (To JLab in Nov.)

Quantum efficiencies

November / Juan Carlos

Fiber light-yield

Finish/check Nov. 2018 / Juan Carlos

Final measurements Summer '19

/ Brian, postdoc, student(s)

Install tubes/bases

December /Juan Carlos, tech Eric Day ?

Replace module ?

Test / CMU postdoc spring '19

Replace (if necessary & practical)

Summer '19 / Brian, tech Eric Day

(in consultation with Whit, Jessie)⁵

Gain vs. HV

Summer '19 / Brian, CMU postdoc,
students

Yield/light-collection

Summer '19 / Brian, CMU postdoc,
students

Gantry

2019? / JLab

Support/positioning system

2019? / JLab

Cosmic testing

Fall '18 ? Spring&Fall '19
/ Brian, CMU postdoc, Catania?

Readout/decoding

September / Juan Carlos

Event display / monitoring

Fall / Juan Carlos

Calibration/monitoring

Summer '19 / Brian, CMU postdoc

Cluster-finding

Fall '18 / Juan Carlos