



Summer 2019 Run  
June 17 to August 18

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# HPS 2019 run

- ❑ Start is scheduled on June 17, Monday
- ❑ We will be asked to be ready for beam by June 14, Friday (start manning the counting room)
- ❑ Restoration of the run page (wiki) with updated run documentation (COO, ESAD, RSAD) should be done by June 7 to get the run certificate
- ❑ Should have HCO completed, ready for beam, by June 10 or 11
- ❑ Run is 9 weeks on the floor

Parameter	Value
Beam energy (5 pass)	4.55 GeV
Beam current	up to 450 nA
Current stability	< 10%
Beam profile at the target	
$\sigma_x$	< 100 $\mu\text{m}$
$\sigma_y$	< 50 $\mu\text{m}$
Halo	< $10^{-5}$ @ 5 $\sigma$
Beam position stability	
in x	< 50 $\mu\text{m}$
in y	< 50 $\mu\text{m}$

CLAS12 run ends on April 14, Sunday. Work in the hall for the transition from CLAS12 to HPS will start on Monday, April 15. Engineering group drafting the installation schedule, and needs input from us.



# Installation, pre-run worm up (at HPS)

- ❑ Restore downstream chicane magnet and the vacuum chamber
- ❑ Move analyzing magnet to its nominal position, survey magnets
- ❑ Open the vacuum chamber, install and survey SVT L6
- ❑ Install and survey the hodoscope and the Ecal vacuum chamber
- ❑ Move Ecal towards the magnet, connect and run cosmic calibration
- ❑ Install and survey SVT L0-3 and the target
- ❑ Connect and tests SVT motion and the cooling, close the vacuum chamber
- ❑ Move Ecal to the position and survey
- ❑ Install and survey the beamline, beam pipes, 2H02 girder with HPS collimator, 2H02A harp and the upstream chicane magnet
- ❑ Test magnets
- ❑ Worm up detectors and DAQ



# For installation and to get the run certificate

- ❑ Provide well defined timeline for detector installation (mostly SVT)
- ❑ Provide details for survey of detectors and beamline
- ❑ Any work for target(s)
- ❑ Add hodoscope to HCO
- ❑ Update RSAD and get it signed
- ❑ Update other documentation, including detector operational manuals
- ❑ Update procedures for MCC OPS
- ❑ Anything else?



# Run Plan – Week-I

- ❑ Beam tune – follow procedures (*must be updated*) for establishing physics quality beam
- ❑ Calibrate beamline devices (nA BPMs, orbit lock)
- ❑ Setup beam trajectory through HPS, align SVT collimator to the beam
- ❑ Setup orbit locks, chime, and FSD
- ❑ Turn ON the chicane, Ecal, and hodoscope
- ❑ ECal and hodoscope rate studies
- ❑ Turn on SVT, occupancy studies
- ❑ DAQ and trigger studies, timing of detectors
- ❑ Studies of beam tails (*need a plan*) and beam stability
- ❑ Trigger validation runs (*need a plan and list of triggers*)
- ❑ Luminosity scan to define the beam current for production running
- ❑ ...



# Production running

- Data taking at 400 nA with 0.125 r.l. W target, 4 hour long runs
- Low luminosity run, 50 nA, for data quality validation, 2x4 hour runs per week
- Random trigger runs to collect beam background events and for trigger/detector efficiency studies, 2 hour runs every 2 weeks
- NO target runs to check beam tails, short 0.5 hour data taking weekly
- “straight through” (chicane off) runs, weekly?
- calibration target runs (foil displaced in z or wire?). weekly



