# E1900237-v4

**In vacuum active elements for frequency-dependent squeezing (per site)**

**elements/electronics needed (green for existing, also listed separately below)**

*On VIP in HAM7:*

* 4x Picomotors for co-aligning the filter cavity 532nm beam (FC532)
* 1x DC PD for FC532 polarization monitoring
* 1x Lens translation stage, PZT driven
  + Either get same model as before, or replace both with Slawek's type. -Peter
  + (would want closed loop, but that needs more wires, assume 2 wires and reusing the existing stage for now) – Lee
* OPO cavity:  
  1 x Oven translation stage, PZT driven   
  1 x Peltier heater   
  3 x Thermistor, possibly more  
  2 x Cavity PZT, avoid crosstalk with oven
* 2 Faraday thermal controllers (provided with SFI faradays, included due to cabling needs. Each should be 12 pins, can be joined to a single D25).

*HAM7*

* ZM4: 4x BOSEM + AWC w/ HDS
* ZM5: 4x BOSEM + AWC w/ HDS
* ZM1: 4x BOSEM w/ HDS (ditherable) without AWC, but it could re-use existing tip-tilt O3:ZM1
* ZM2: 4x BOSEM + AWC w/ HDS
* ZM3: 4x BOSEM w/ HDS (ditherable) without AWC, but it could re-use existing tip-tilt, spare or one of OMs if replaced with HDS.
* VOPO 6 x aOSEM
* 3x DCPD for fiber monitoring (2x taken from O3 VIP)
* 1x: Beam diverter (from HAM6)
* 4x: Picomotors (for aligning to QPDs)
* 2x DC QPDs (105kHz BW)

*HAM5*

* ZM6: 4x BOSEM w/ HDS without AWC, but it could re-use existing tip-tilt (ZM2 in O3) if one of the OMs is replaced by HDS
* 2x Filter cavity HSTS

*HAM8:*

* 4x picomotors for DC-QPD centering
* 2x 1064 DC-QPDs (high-transimp)

**Existing elements/electronics that will be re-used (may need modified cabling)**

*On VIP*

2x DCPD for fiber monitoring  
1x Lens translation stage, PZT driven

    OPO cavity  
      1 x Oven translation stage, PZT driven   
      1 x Peltier heater   
      3 x Thermistor, possibly more  
      2 x Cavity PZT, avoid crosstalk with oven  
  *HAM7 (moved from HAM6):*  
   1 Beam Diverter (currently in HAM6 between OPO and OFI)

*Suspensions*

VOPO 6 x aOSEM