

eIC Silicon R&D at LBNL

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LBL eIC meeting

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eRD11 milestones

All dates based on start date of 12/15/21

Milestone Description	Date
Report on baseline stave designs	04/27/2022
Report on baseline disc designs	06/08/2022
Report on simple disc & stave models	12/21/2022
Up-to-date silicon tracking CAD models	06/15/2022
Report on mechanics conceptual design	07/27/2022
FY22 R&D report (total hours)	09/21/2022

What can be started now?

Stave designs

Milestone Description	Date	Staff Hours (approx.)	Postdoc hours(approx.)
Report on baseline stave designs	04/27/2022	96	96

- Look into stiffness & vibrational requirements for staves & discs
 - What has been studied by ITS3 already? What do we know from our own simulations ?
- Stave options
 - ITS-like (truss), I-beam (ATLAS), something else?
 - Benefits & drawbacks (material budget, stiffness, etc.). Information gathering
- Stave configurations based on likely reticle size
 - Layout options to meet the lengths (~34 & 47 cm)

Disc designs

Milestone Description	Date	Staff Hours (approx.)	Postdoc hours(approx.)
Report on baseline stave designs	04/27/2022	96	96
Report on baseline disc designs	06/08/2022	140	140

- Look into stiffness & vibrational requirements for staves & discs
 - What has been studied by ITS3 already? What do we know from our own simulations ?
- Disc options
 - Stave based, plate based, etc.
 - What studies already exist? Information gathering

Mechanical design

- Most work will have to wait for engineer/technician time & relies on stave/disc work as a prerequisite
- Now: Review cooling options (~80 hrs split between staff & postdoc, almost all set aside for carbon foam review)
 - Carbon foam for air cooling
 - ITS3
 - Liquid cooling
 - ITS2