

Cost Estimate

Group	Labor
Survey & Alignment	3 wks x 2
Magnet Test	1 wk x 2
Engineering Design	16 wks
Software	3 wks x 2
EES	6 wk x 2
EH&Q	4 wks

Item	Material Procurement	Shop	Labor
New Dipole Magnet	Dipole Magnet (\$8,000) Hall Probe (\$2,000)		Design (2 week) Mapping (1 week) EESDC (1 week) Alignment (2 days)
New Power Supply	Power Supply (\$5,000)		Software (2 weeks)
New Beamline	2 Super Harps and Fast Valve (\$38,000)	Pipes + Pedestals (\$20,000)	Design (6 weeks) Alignment (1 week) Software (4 weeks) EES (6 weeks)
Radiator (cooled ladder, FSD)	0.02 and 0.10 mm Cu foils (\$2,000)	\$4,000	Design (2 week) Alignment (2 days)
Sweep Dipole			
Electron Dump	Pure Cu (\$5,000)	Dump + Pipes (\$15,000)	Design (4 weeks) Alignment (1 day)
Cu Collimator	Pure Cu (\$5,000)	Collimator + Stand (\$5,000)	Design (1 week) Alignment (1 day)
Photon Dump & Stand	Pure Al (\$3,000)	\$4,000	Design (1 week) Alignment (1 day)
Safety Review			4 weeks
Install			6 weeks
Bubble Chamber			Alignment (1 week)
Total	\$68,000	\$48,000	\$80,000
Indirect G&A (55.65%)	\$37,800	\$26,400	\$42,500
Indirect Stat & Fringe (57.15%)			\$45,700
Total	\$105,800	\$74,400	\$168,200