

ILC Source Laser System Update

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7/18/07

Stretcher design and hardware

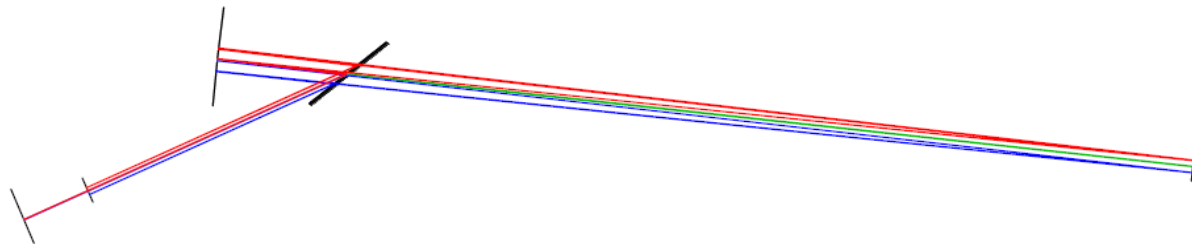
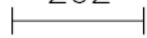
- Stretcher will extend pulse from
 - ~ 300 fs to $\sim 500 - 1$ ns
- Uses single grating for diffraction and collimation
- Elements are
 - Grating
 - Curved mirror (ROC = 3 m)
 - Flat mirror
 - Dual prism retroreflector
- Optics are a first pass to evaluate design
 - Update of optics with dielectric coatings in FY08
- Mounting of large optics is difficult
 - Custom machined mounts are necessary – lots of cutting, drilling and thread taping

Stretcher layout

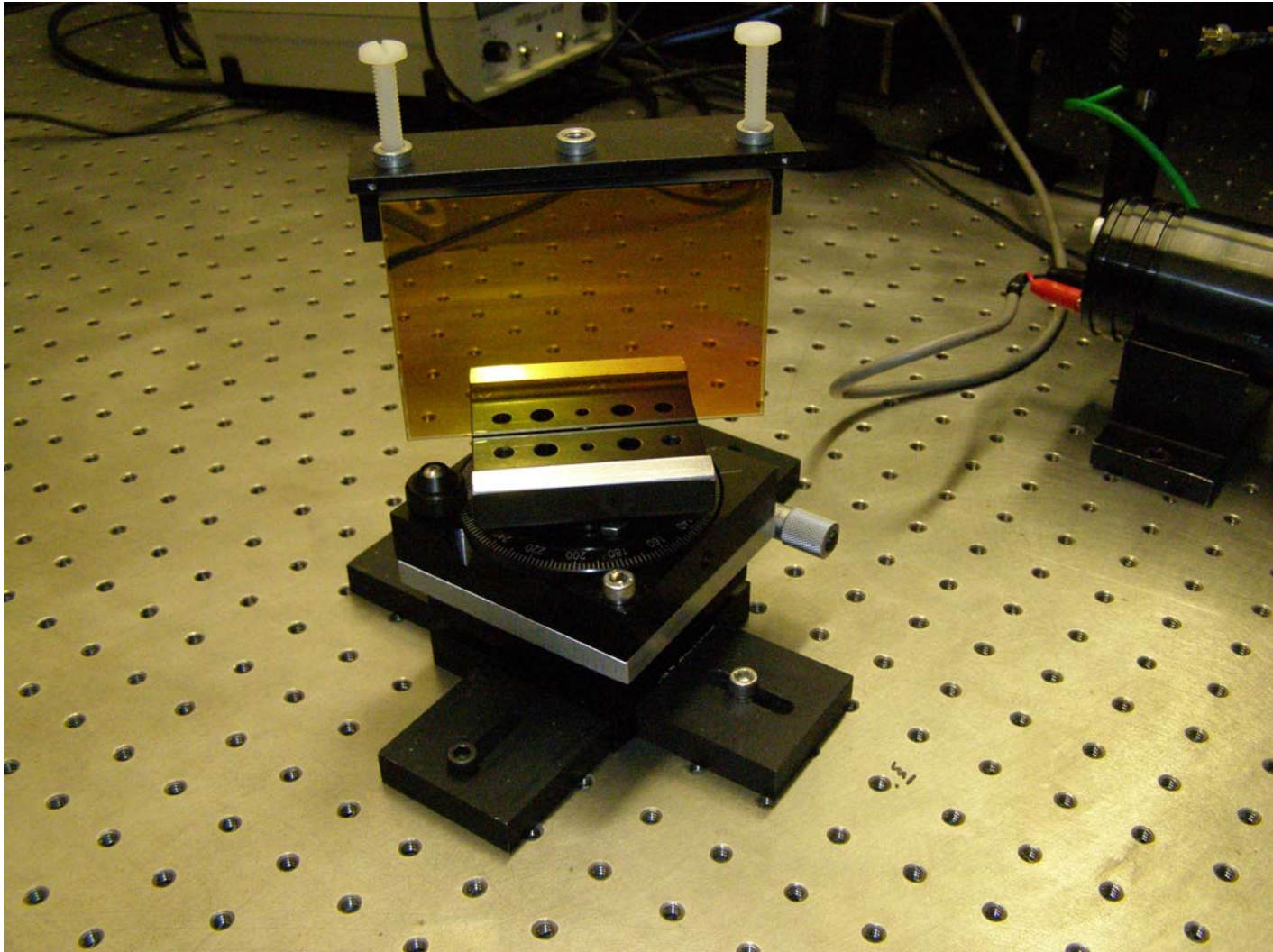
2200 g/mm, BW 5 nm bW, OPD 516ps
OPTICAL SYSTEM LAYOUT

UNITS: MM
DES: OSLO

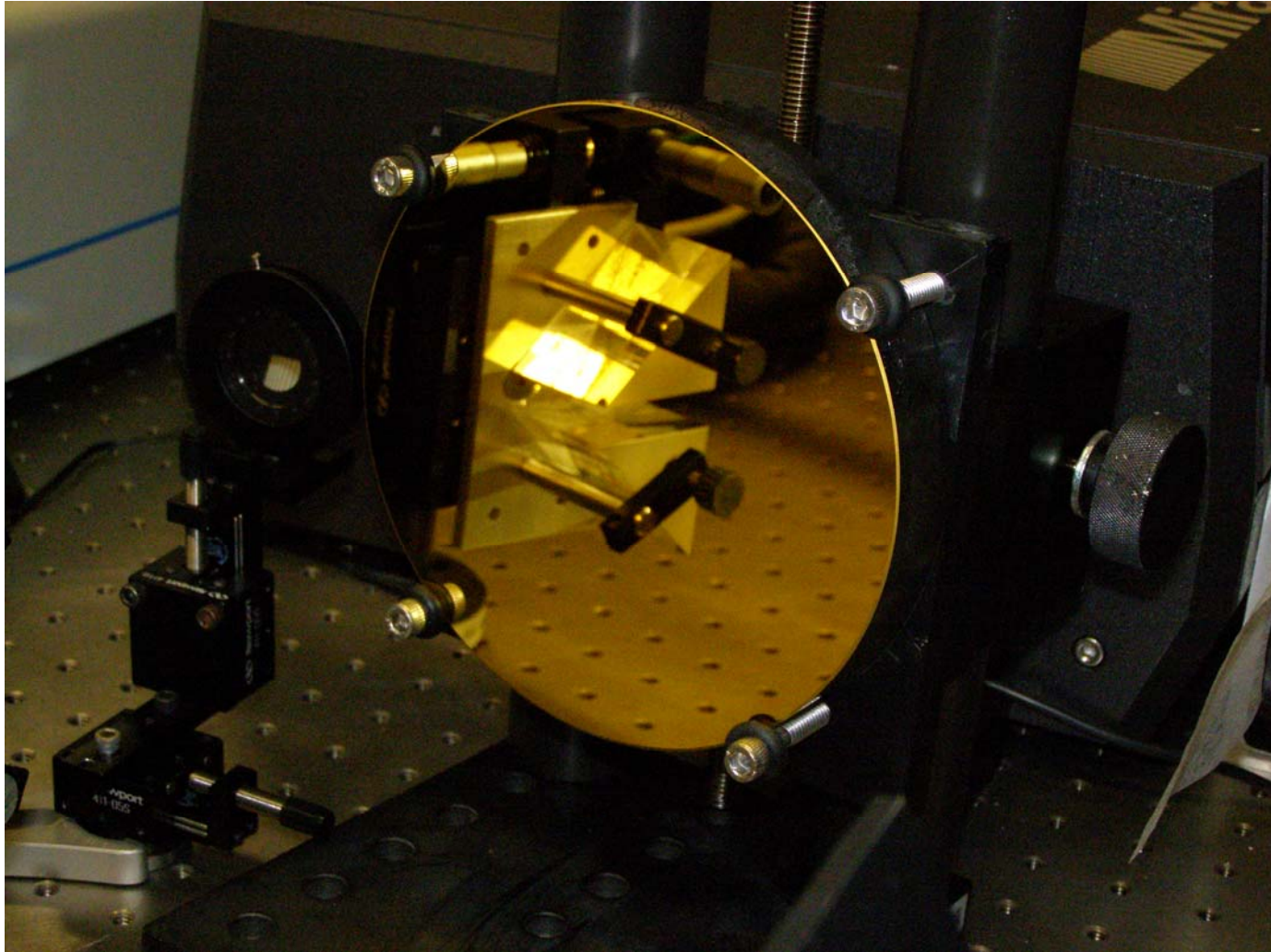
202



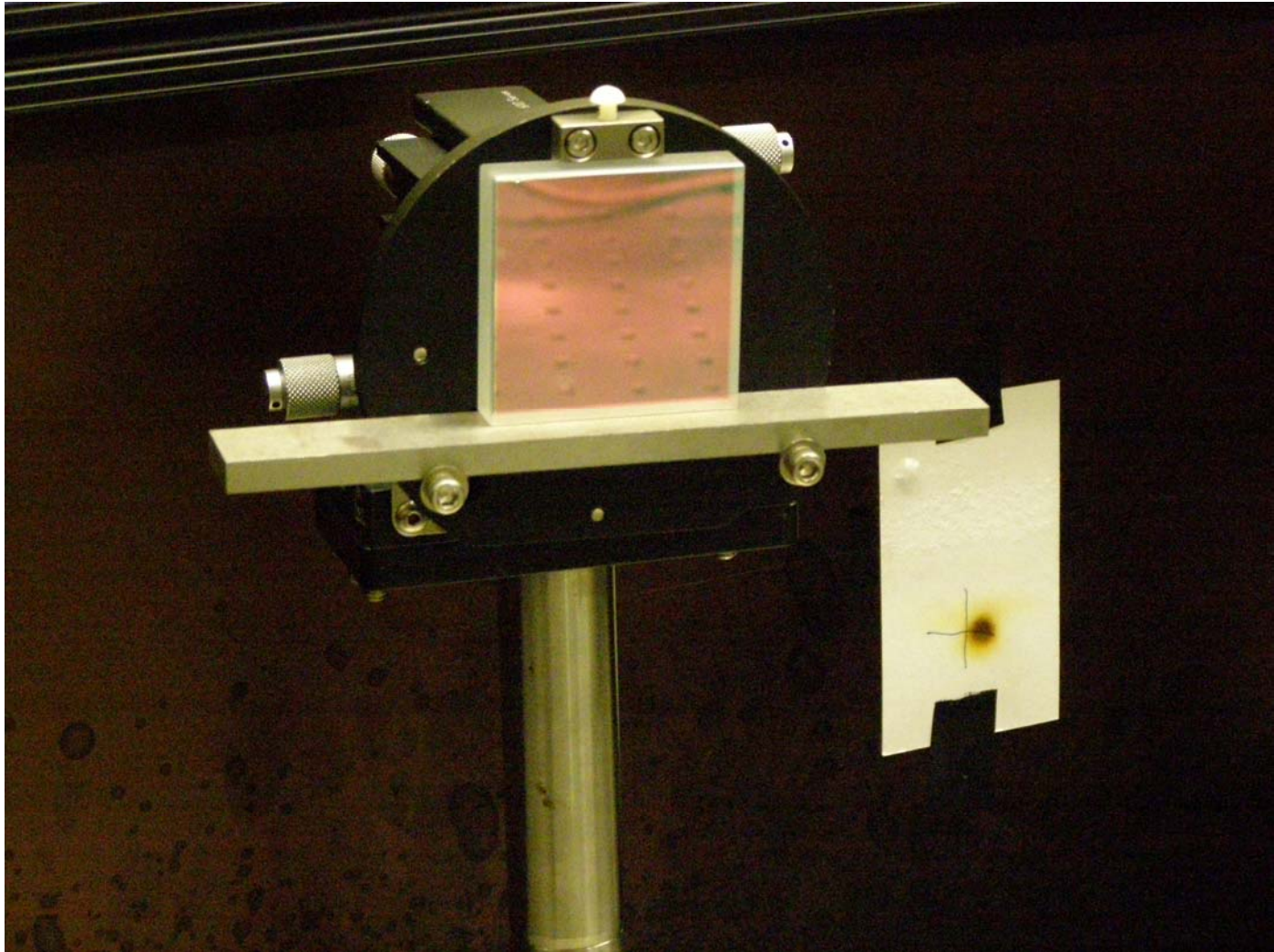
Grating



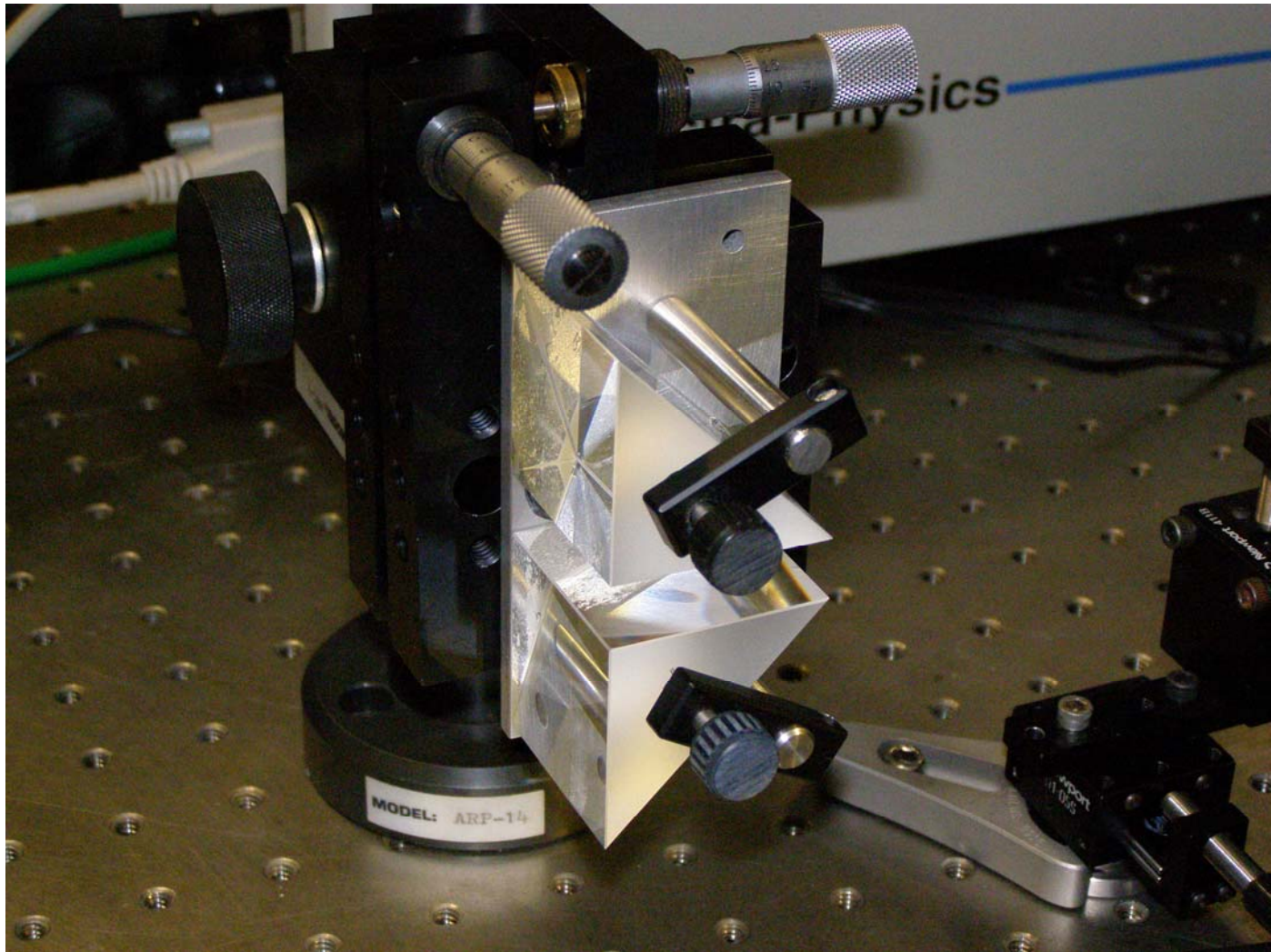
6 " gold coated 3 mcc mirror



Flat mirror



Dual prism retro-reflector



Next steps

- Alignment of Stretcher
- Measurement of pulse width
- Setup of Pockel's cell to generate 3 MHz pulse train

Other news

- 40 W ELS pump laser delivery is delayed
 - New delivery date is early August
- Purchase of KM Labs cryogenically cooled amplifier system has been initiated, should be delivered by the end of FY 07
 - k\$ = 111,000
- SBIR phase II with KM Labs is approved (as of 7/16/07)