

# Multiplier/Optics Performance

230/460 Multipliers: Cryo-cycled 3x

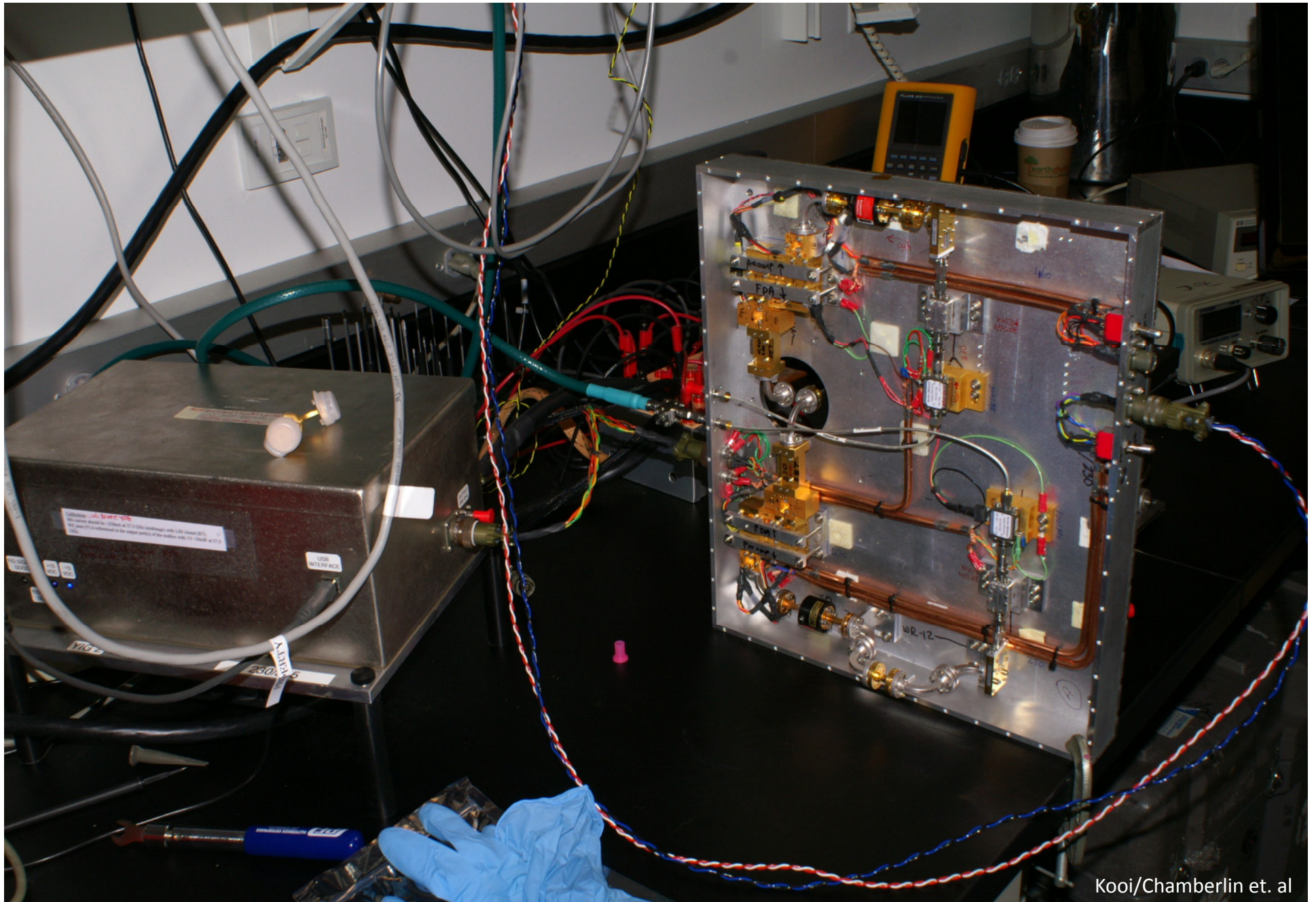
345/650 Multipliers: Cryo-cycled 1x

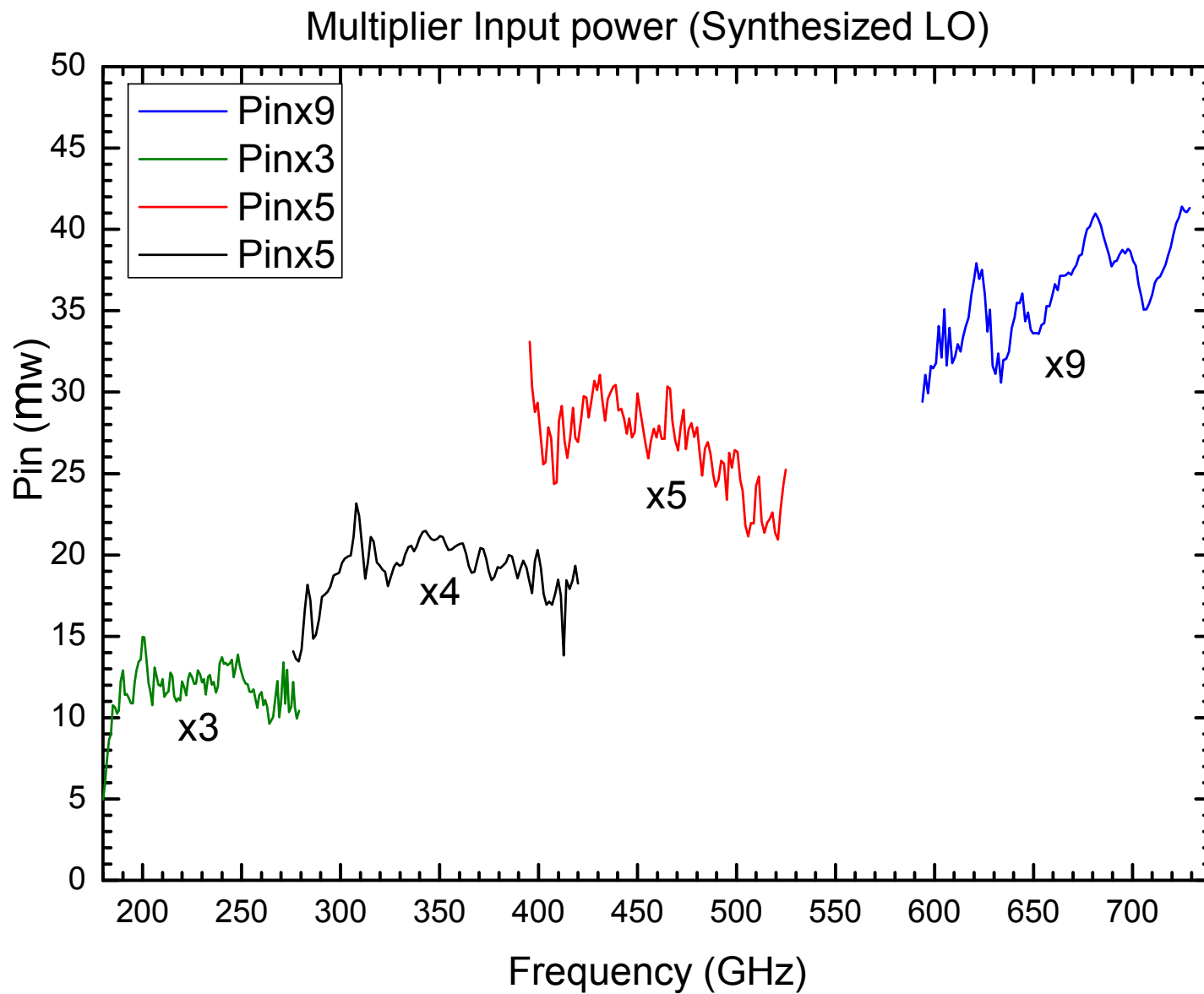
19 Jan 2012

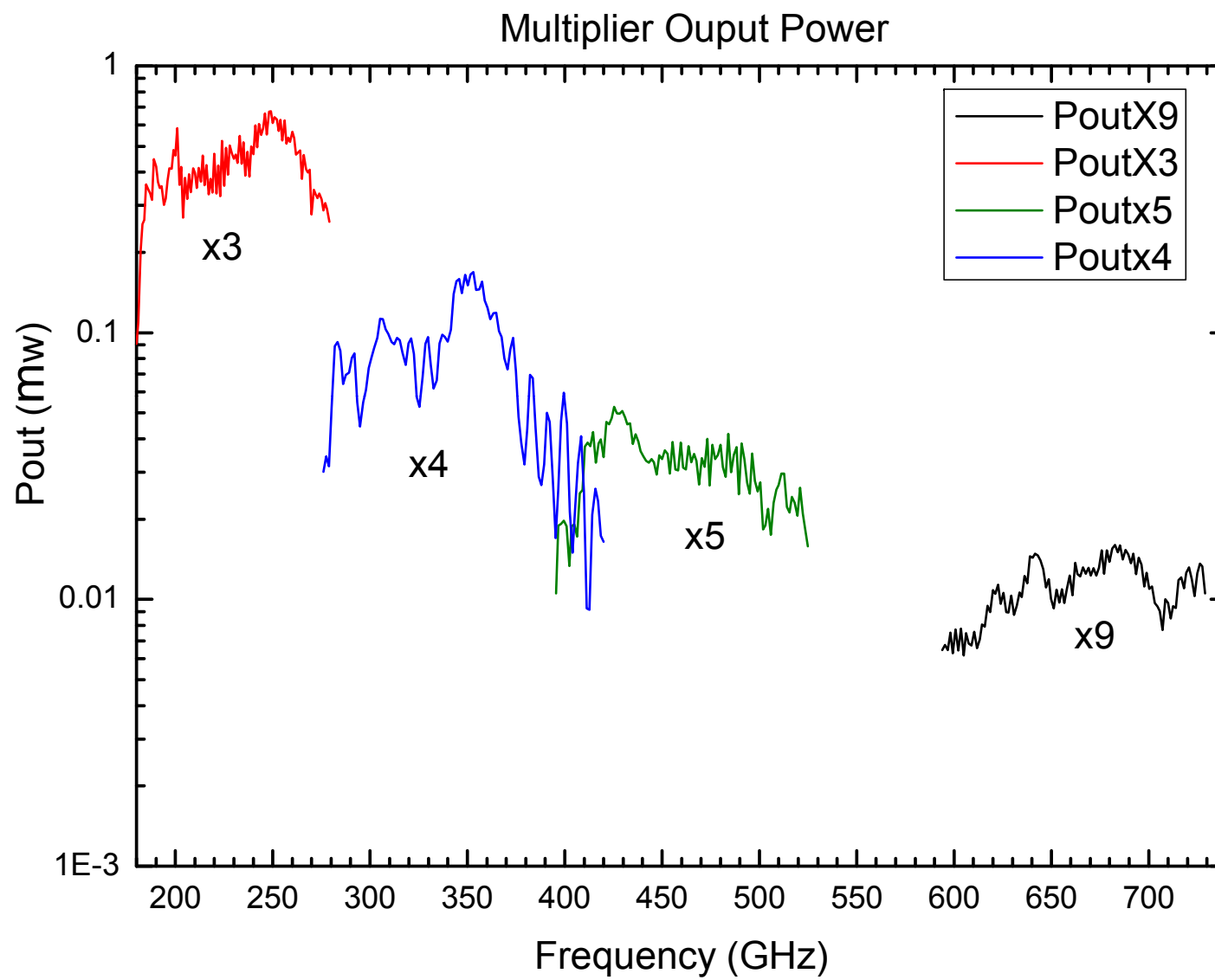
J. W. Kooi

R. A. Chamberlin

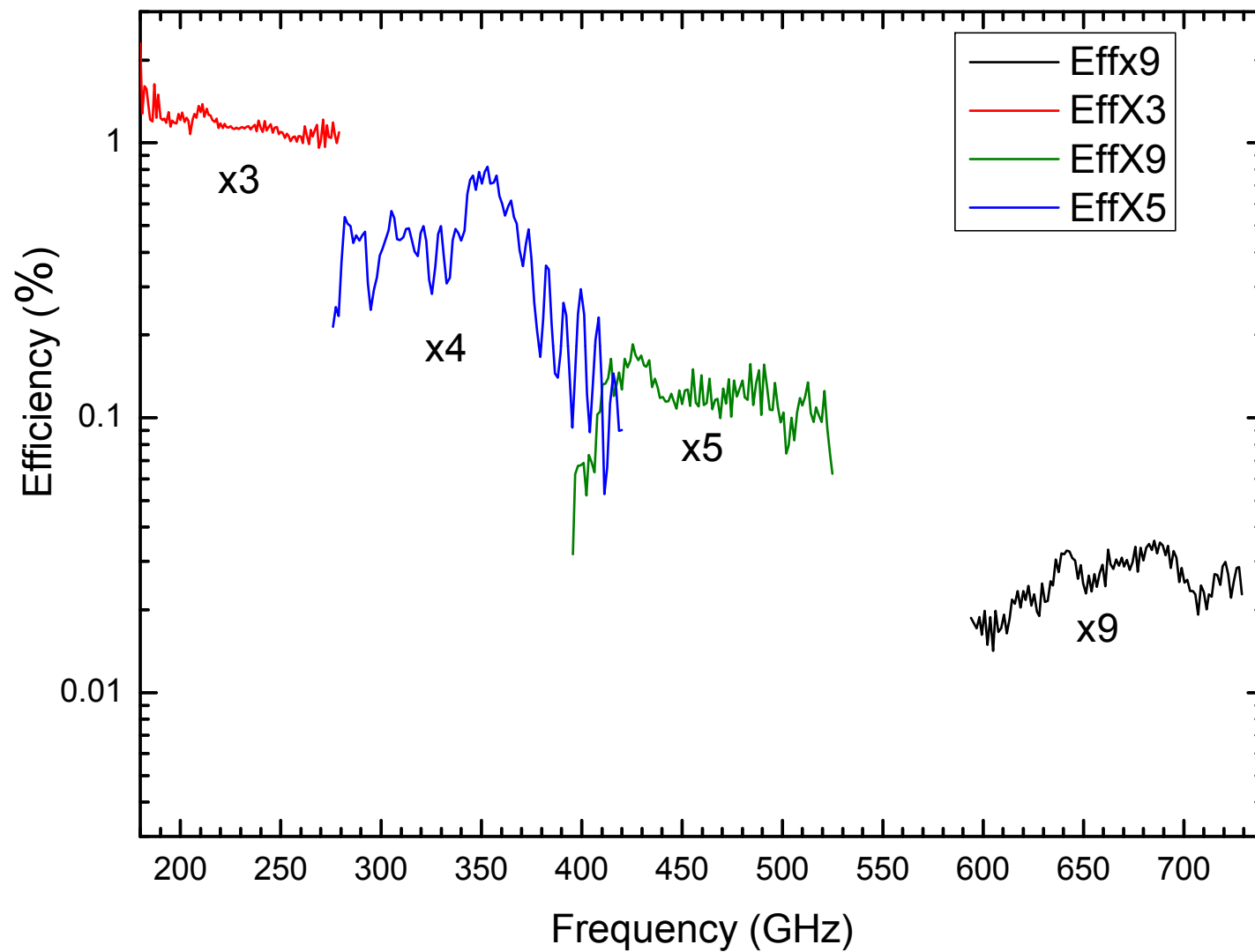
## Synthesized LO setup





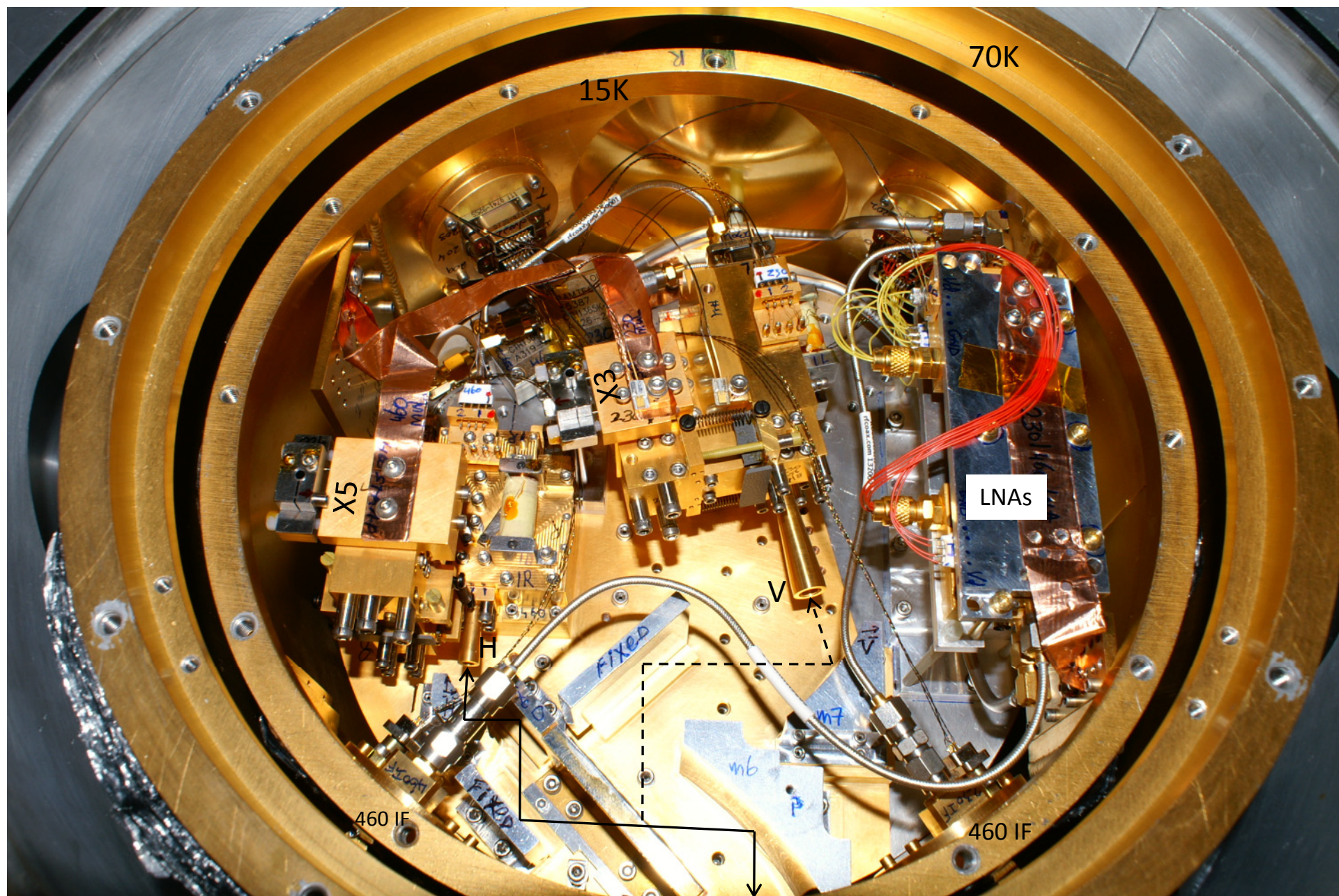


## Multiplier Efficiency



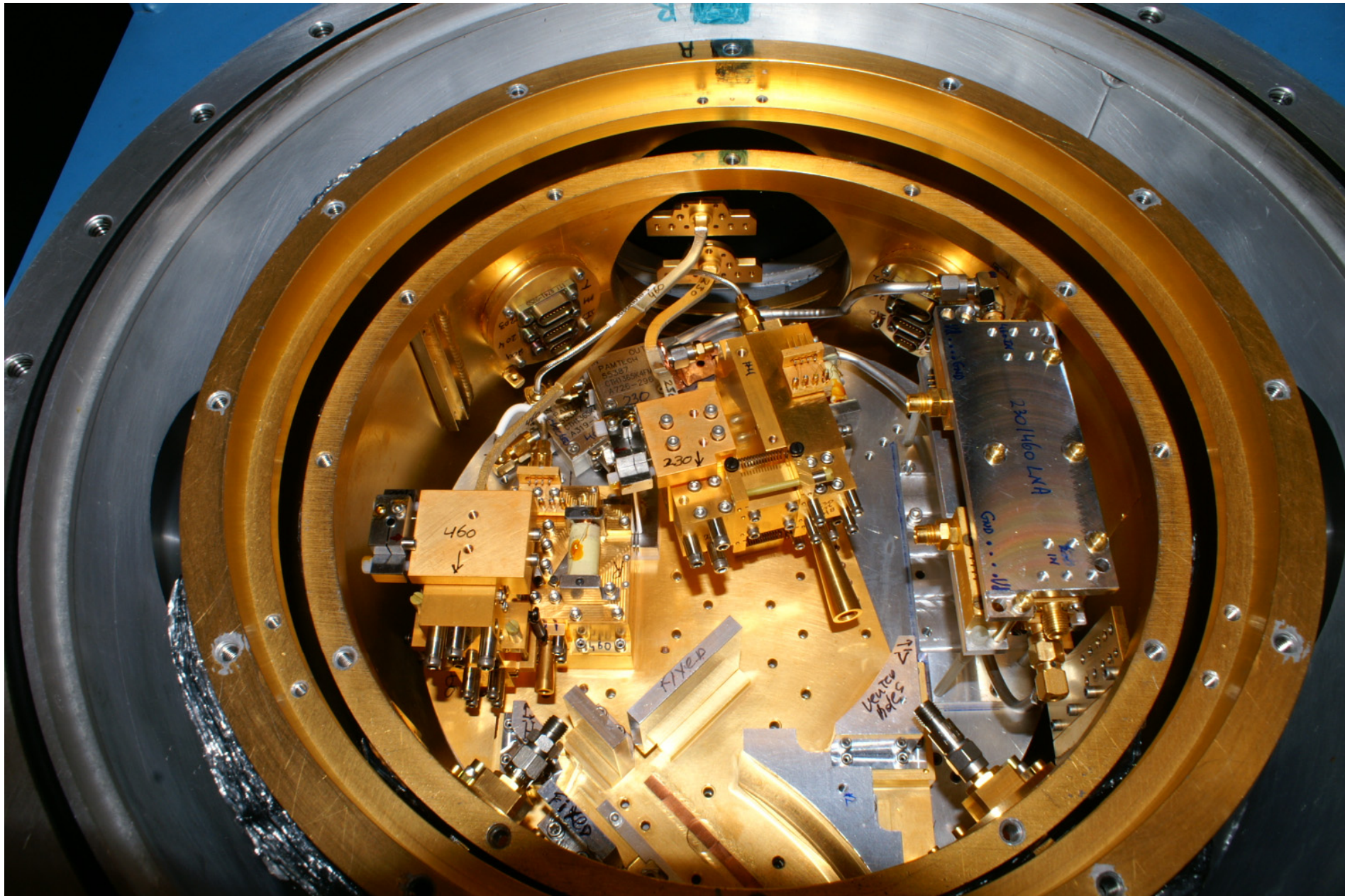


## Dual Color 230/460 FPU in Cryostat #2

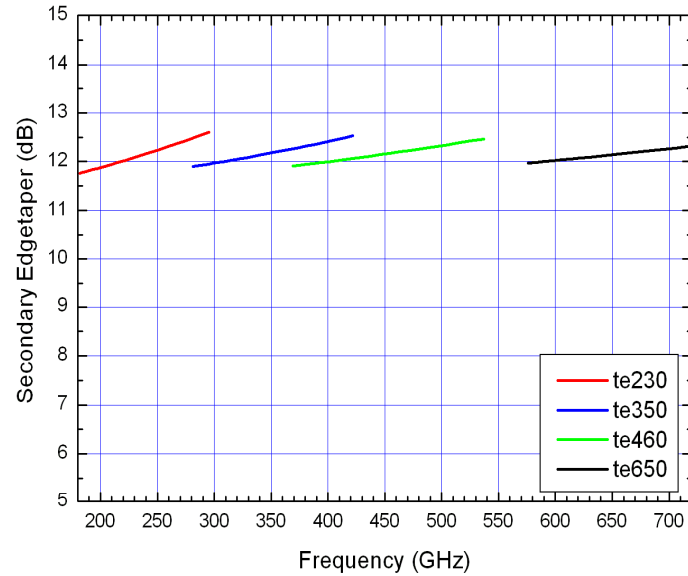




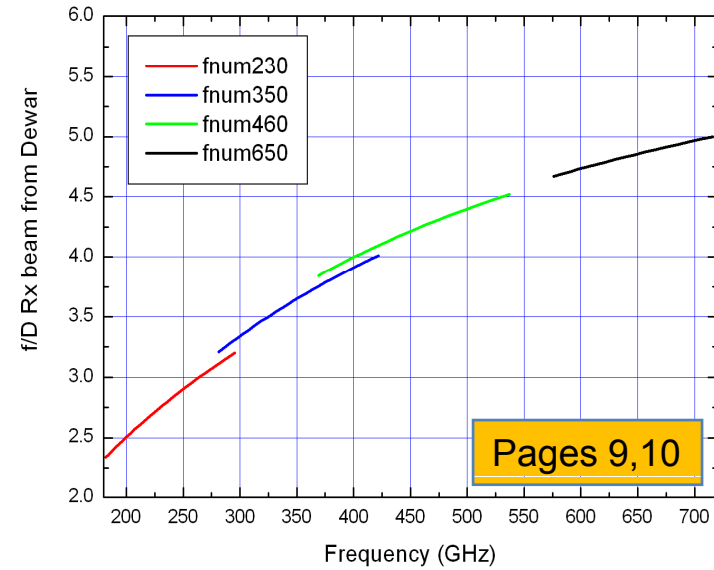
Dual Color 345/650 FPU in Cryostat #2



# CSO Sidecab Rx Optical Design Parameters

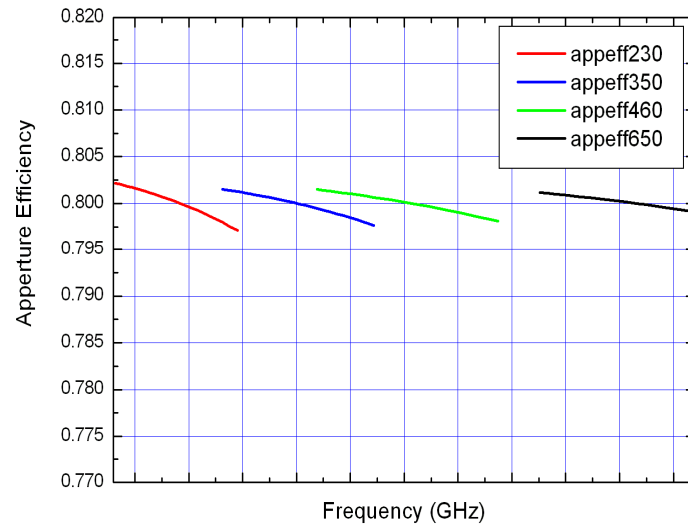


Secondary edgetaper of the proposed sidecab optics configuration.



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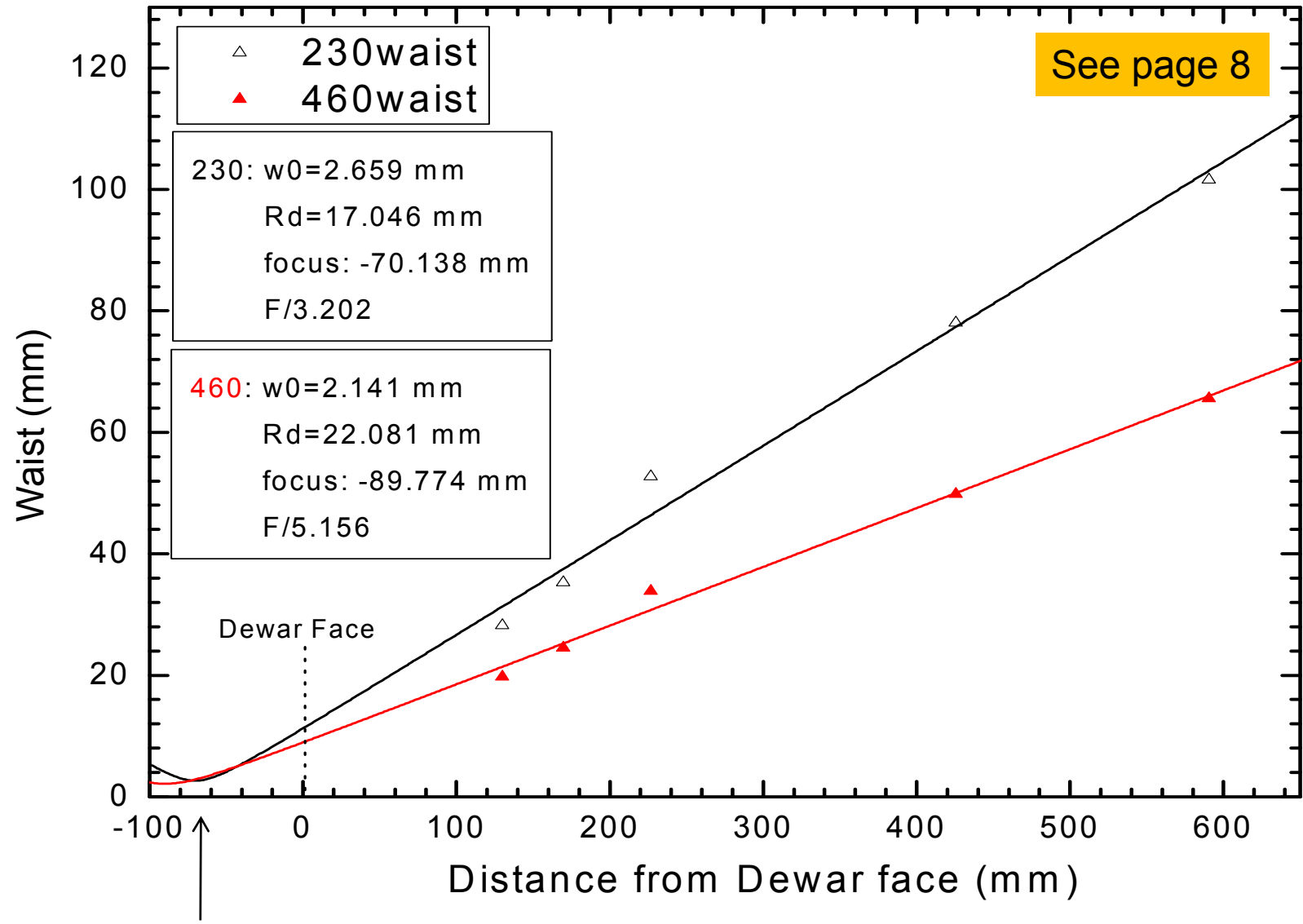
f/D ratio of the Receiver beams just outside the cryostat. Below 230 GHz, there will be some vignetting ( $\leq 1\%$ ) on the 5<sup>th</sup> mirror due the fast beam



Aperture efficiency with a fixed 5<sup>th</sup> mirror – Cryostat focal distance

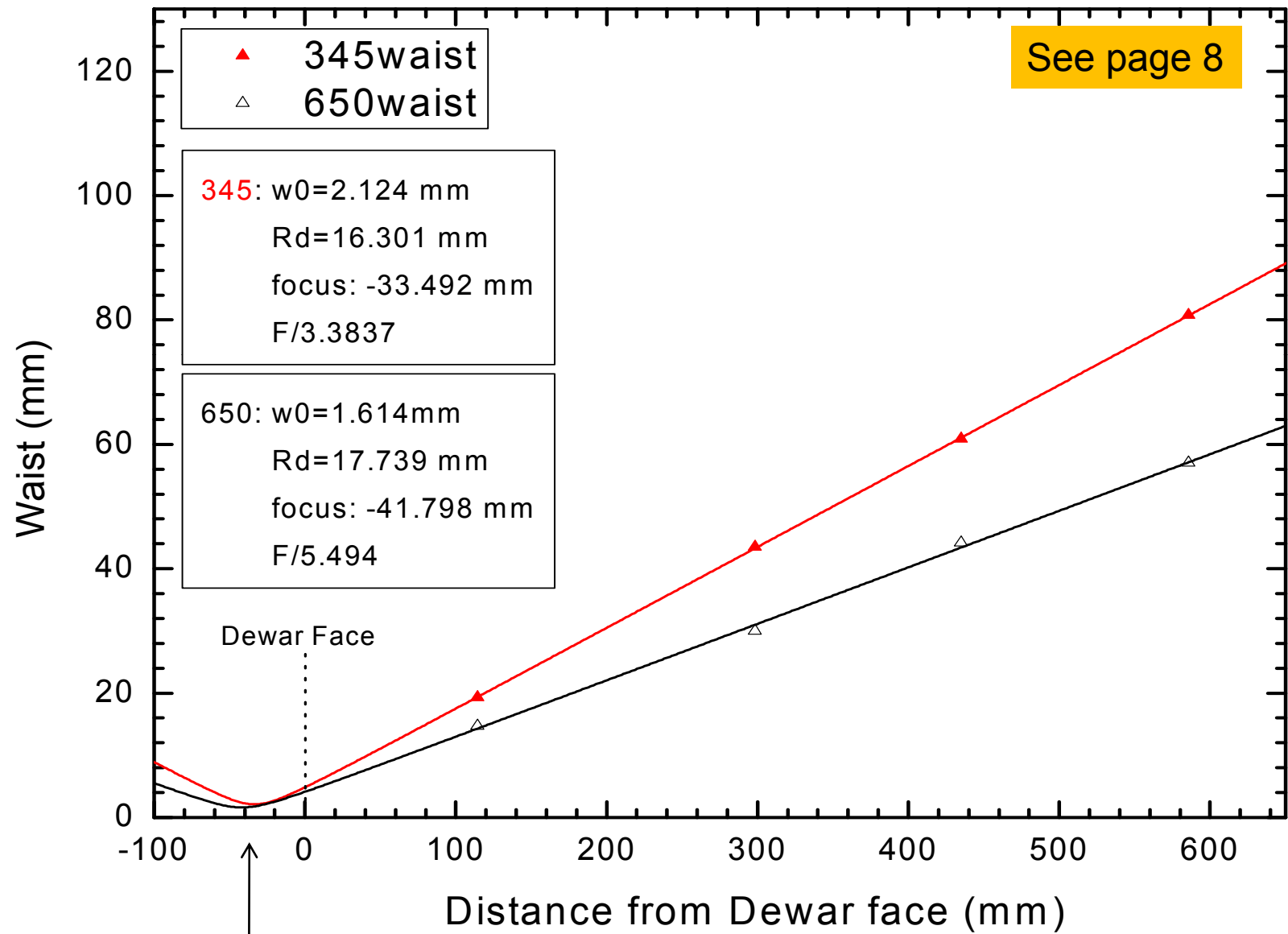


## 230/460 Beams



12-77K stage. Foci by design at different locations

## 345/650 beams



12-77K stage. Foci by design at different locations

345 GHz/650 GHz Dual Color FPU Assembly

