

# Preparations for HZDR (zebra fish irradiation)

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PPS, 10.03.2023



# Preparation for HZDR

**Goal: 90% homogeneity in 5x8 mm rectangle, max dose 30 Gy**

## Analysis dose (High dose rate)

- 12 films irradiated
- **5mm plate:**  
2x doubled dose
- **10mm plate:**  
5x doubled dose, 1x quadruple dose

## Analysis dose (low dose rate)

- 12 films irradiated
- **5mm plate:**  
dose a little too low
- **10mm plate:**  
dose a little too high

## Analysis:

- Only front films will be shown.
- Optimum ROI vs. same ROI for all films

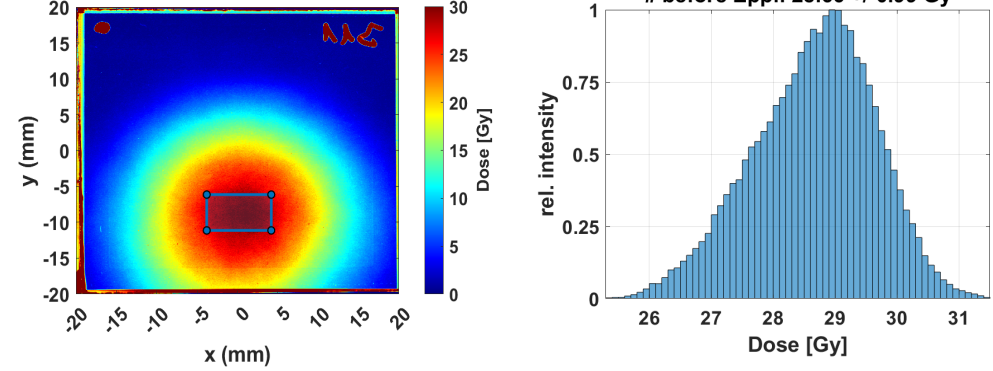
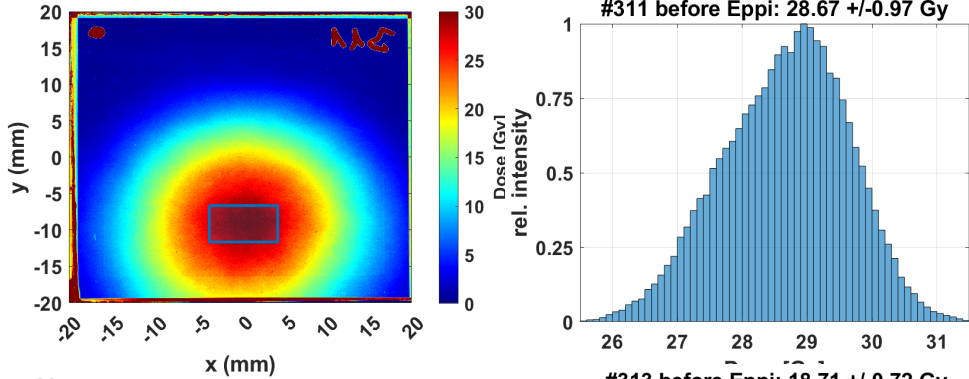
# LDR & 5mm plexi

## Optimal ROI

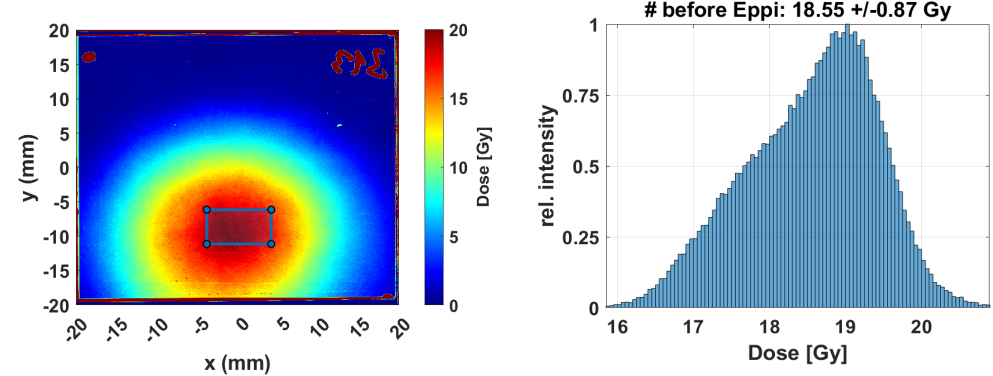
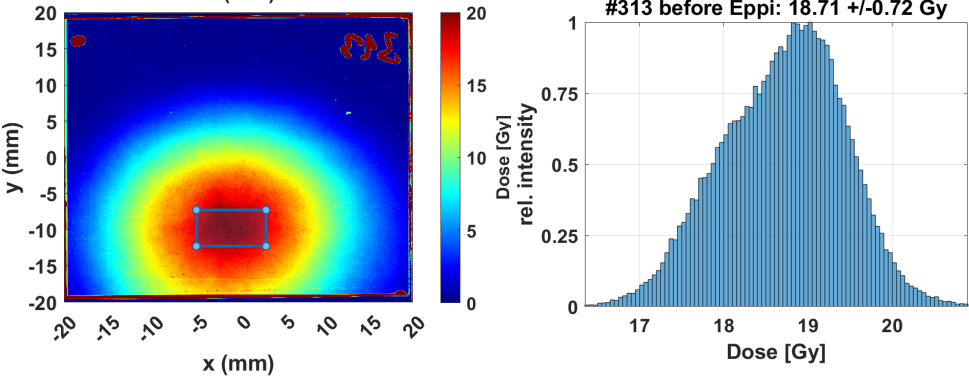
## Fixed ROI

Expected dose

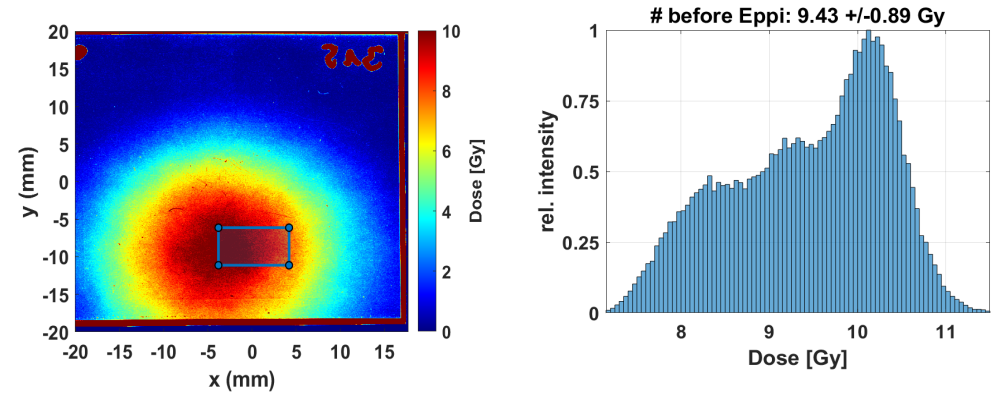
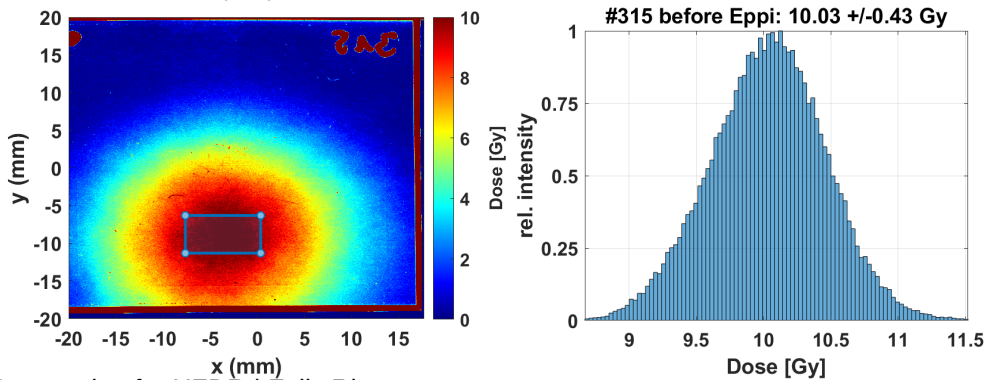
30 Gy



20 Gy



10 Gy



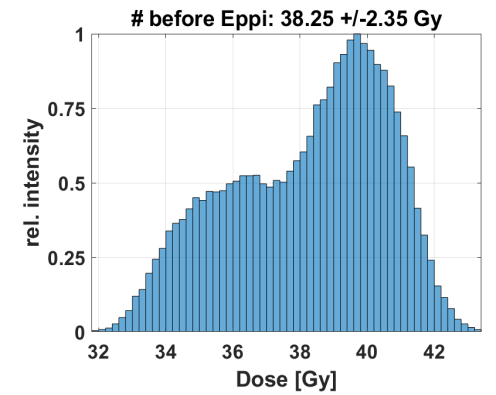
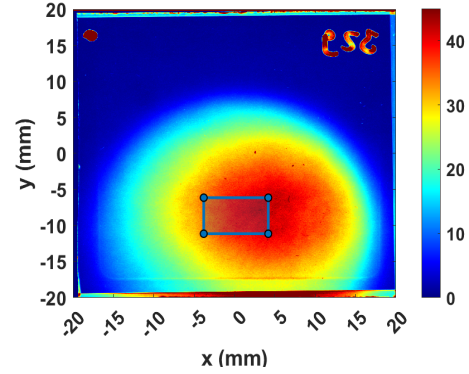
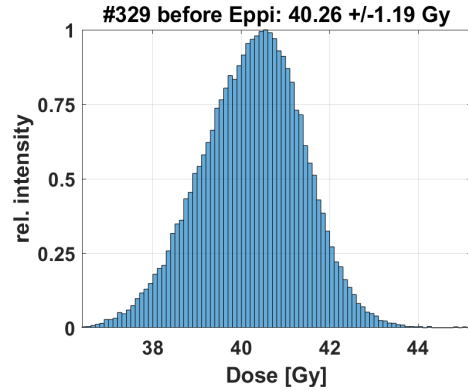
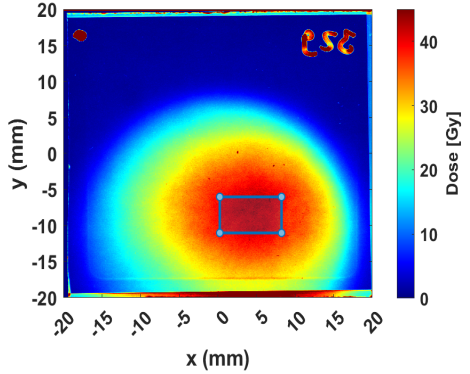
# LDR & 10mm plexi

## Optimal ROI

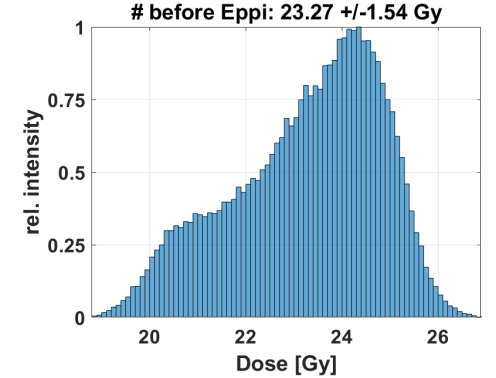
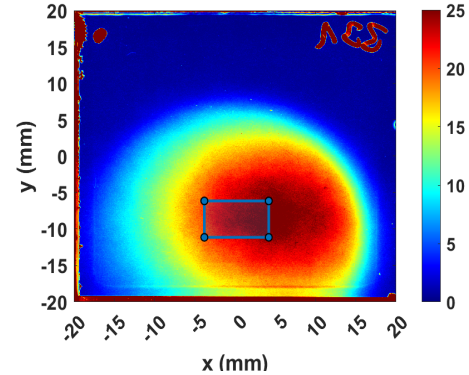
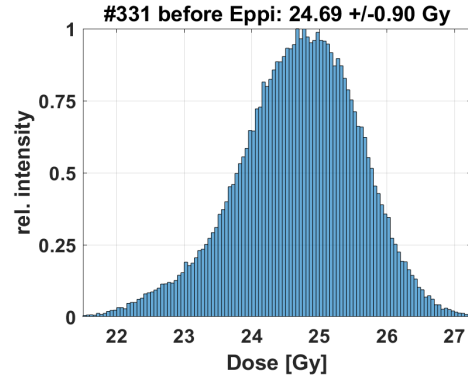
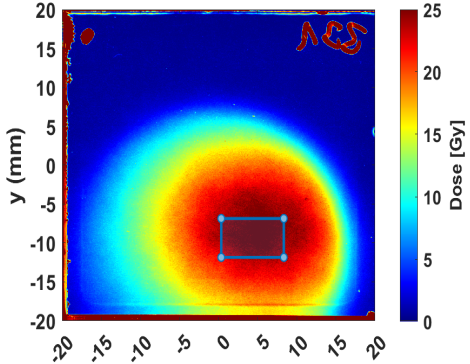
## Fixed ROI

Expected dose

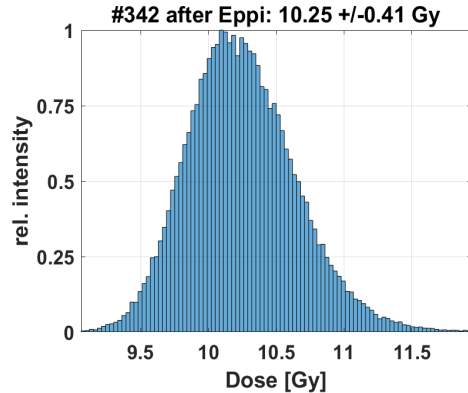
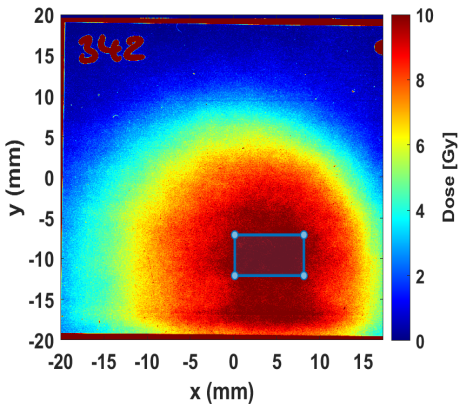
30 Gy



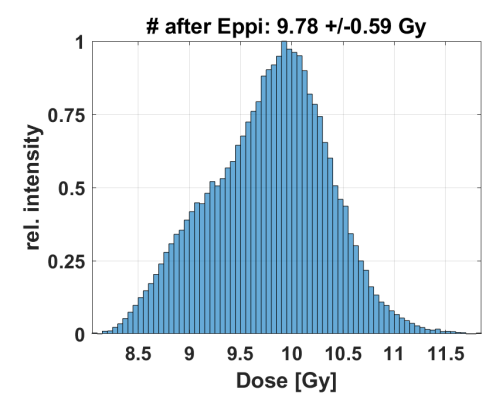
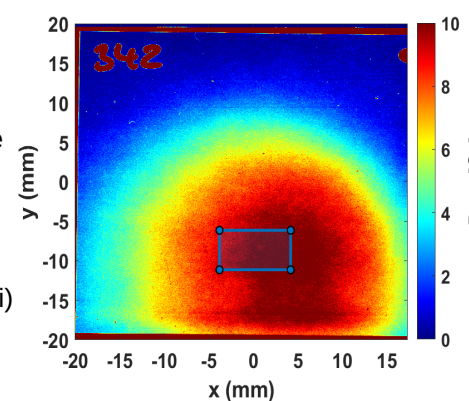
20 Gy



10 Gy



This is the film after Eppi (problem with film before eppi)



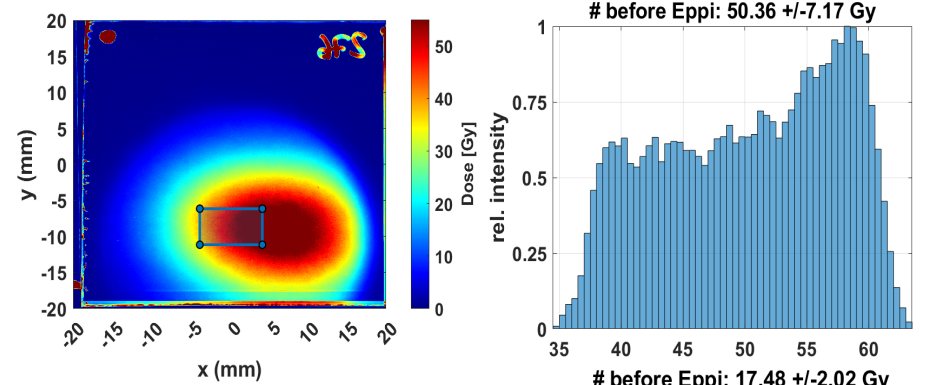
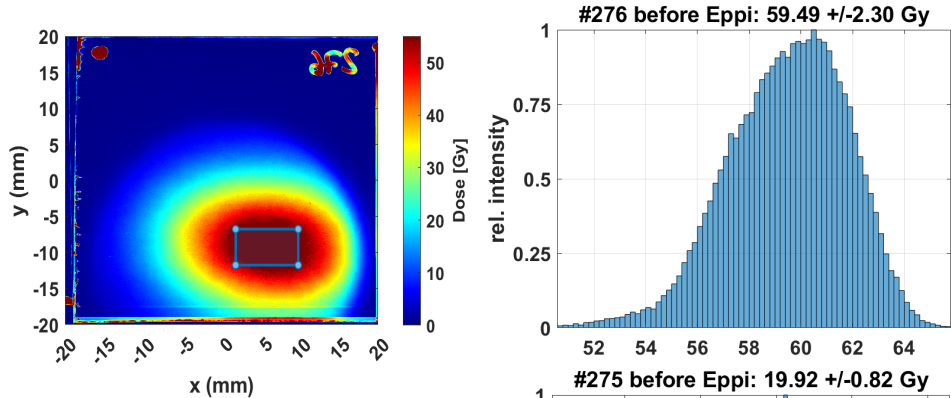
# HDR & 5mm plexi

Expected dose

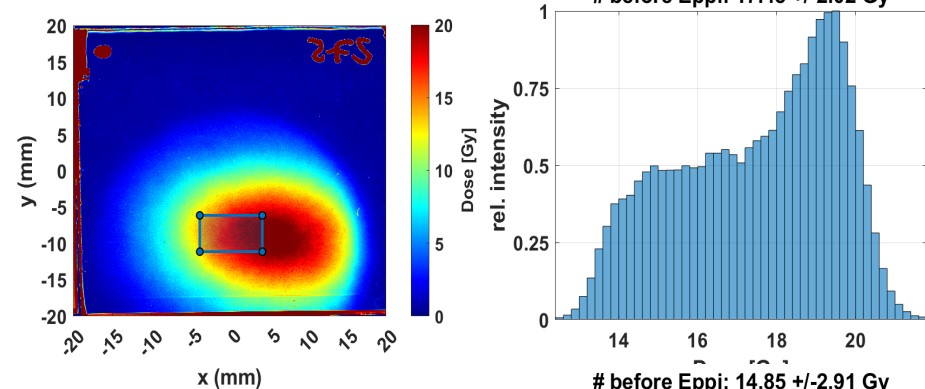
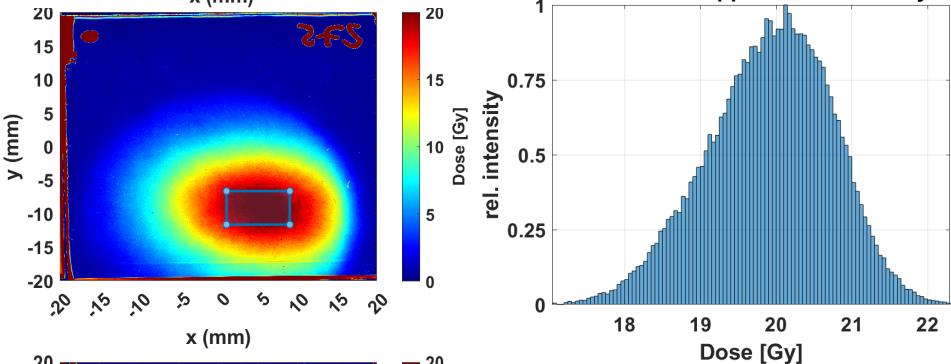
Optimal ROI

Fixed ROI

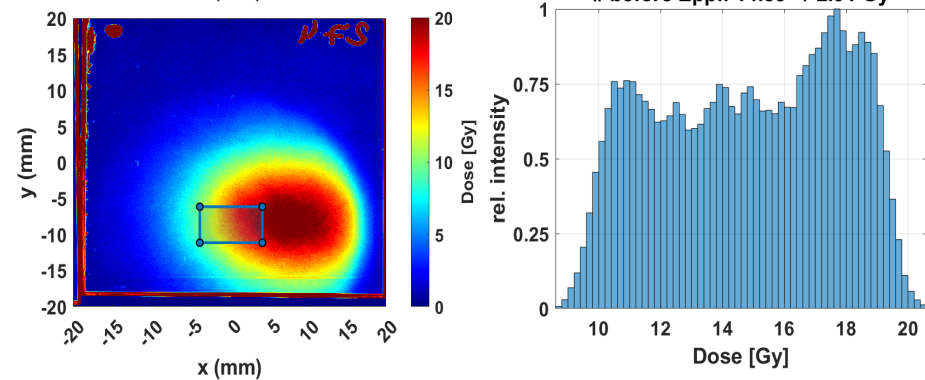
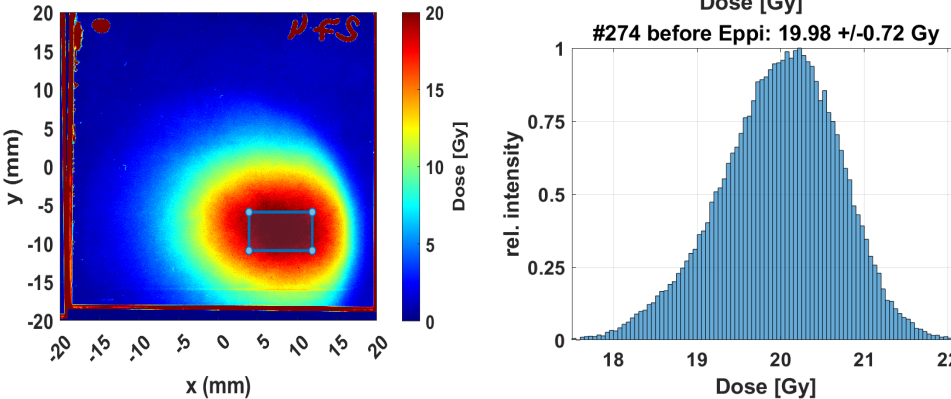
26.4 Gy



17.5 Gy



8.7 Gy





# HDR & 10mm plexi

Expected dose

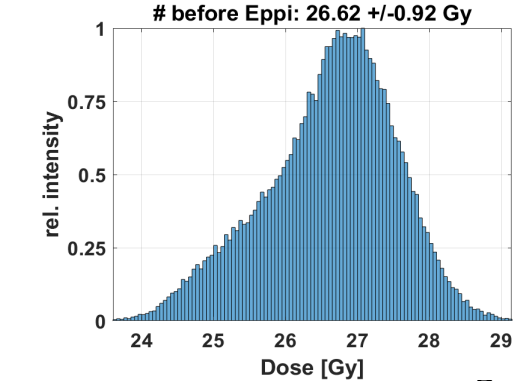
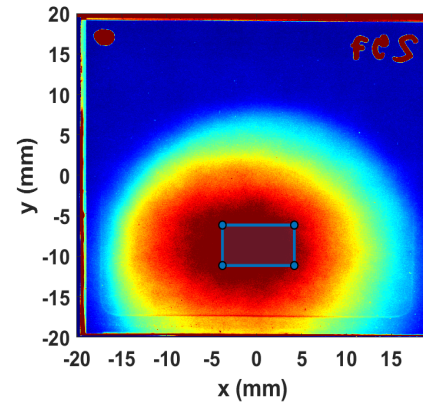
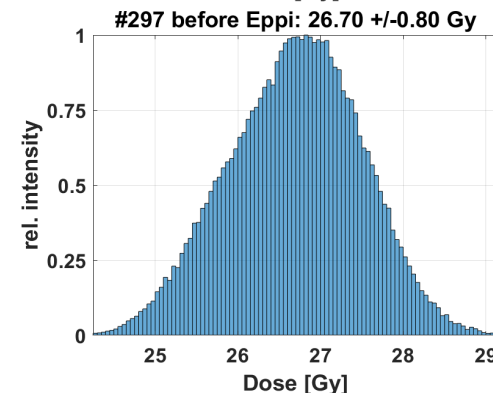
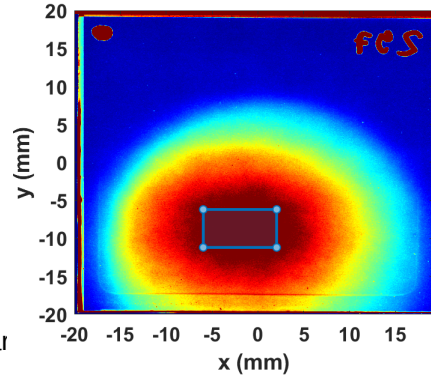
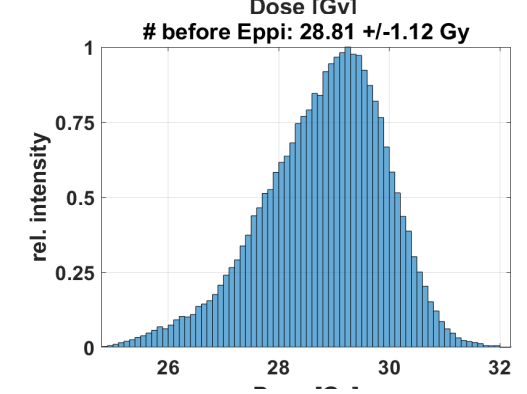
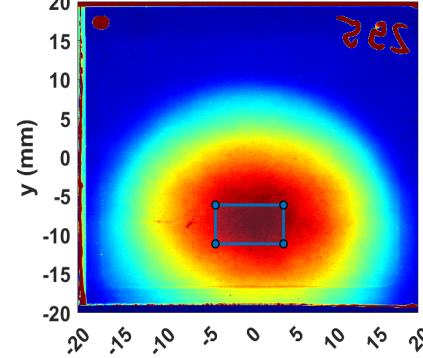
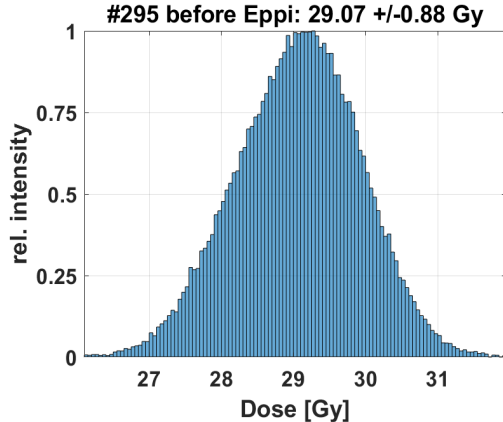
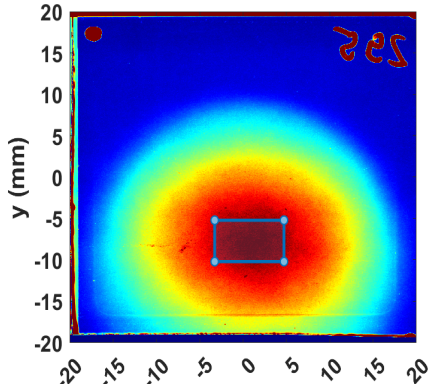
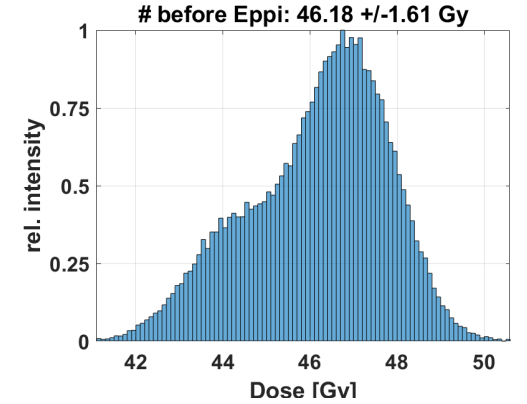
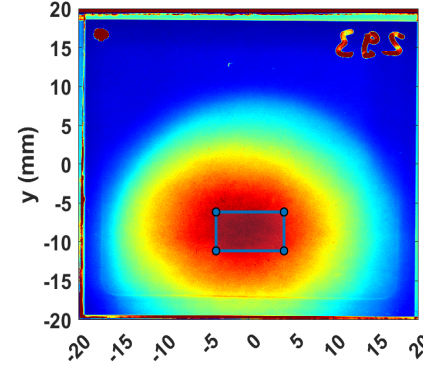
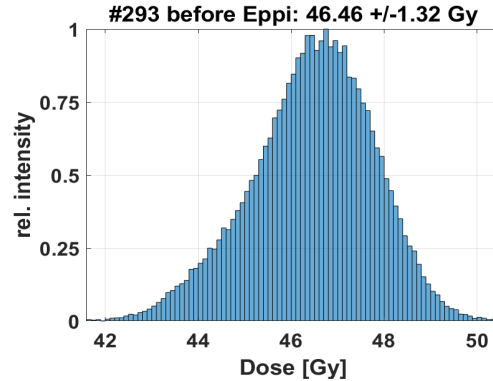
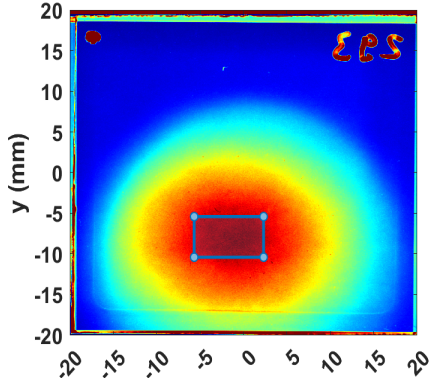
18.2 Gy

12.1 Gy

6.1 Gy

Optimal ROI

Fixed ROI



# Summary

- **Very good homogeneity in ROI (5 mm x 8 mm). 10 mm plexi better than 5 mm plexi.**
- **Absolute dose needs to be adjusted and checked carefully.**
- **Horizontal alignment needs to be checked and needs to be consistent for all setups.**