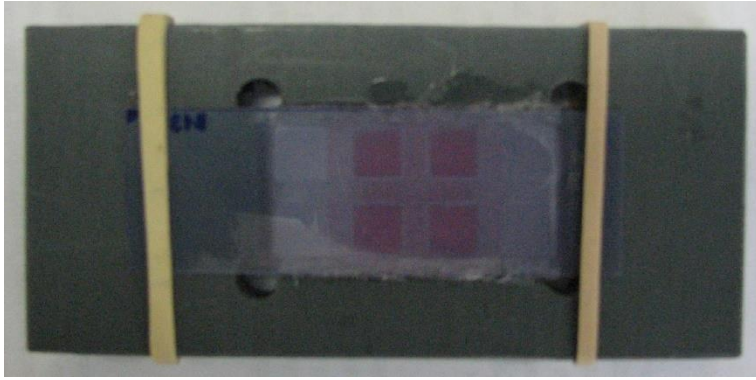
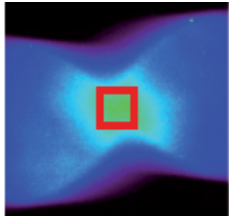
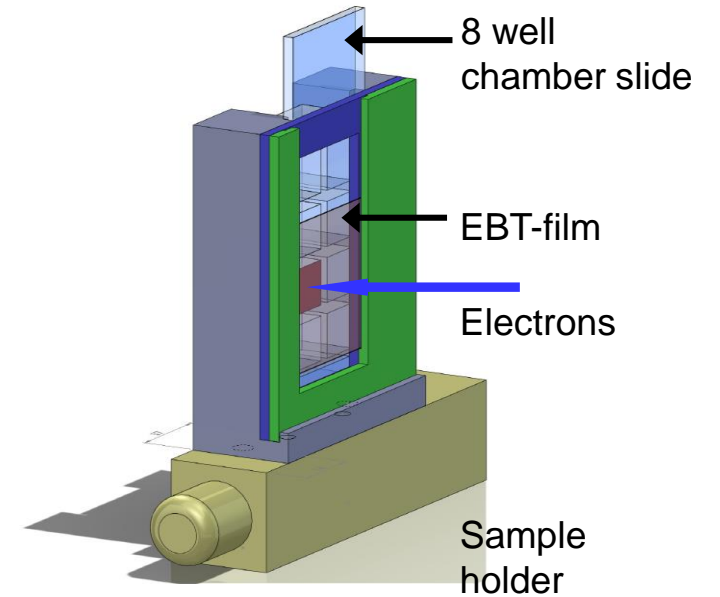


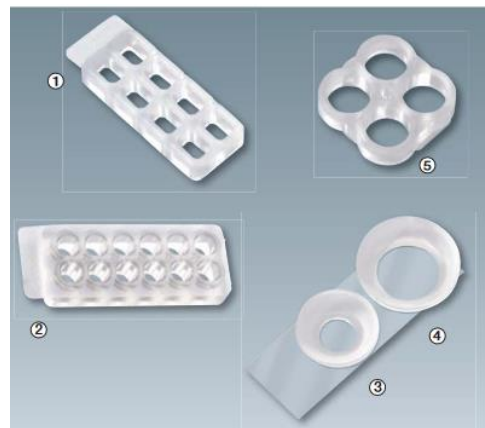
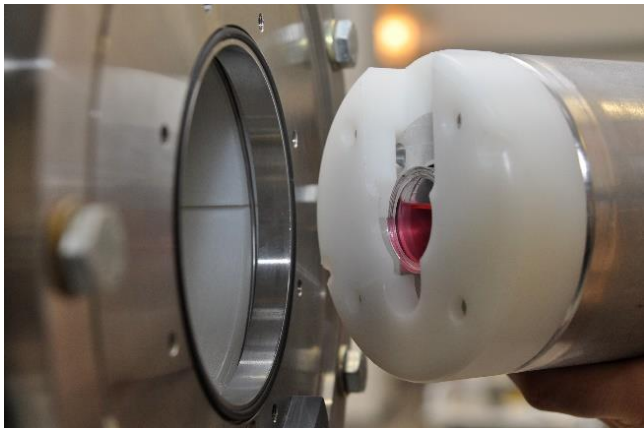
Sample geometries used for past cell irradiation experiments at laser systems and ELBE



- Laser driven electrons & ELBE electrons
- 8-well chamber slides, plastic bottom
- EBT film in front of sample
- Cells remain on slide for in-situ fluorescence detection of γ H2AX/53BP1



- Laser driven electrons & protons & ELBE electrons
- 35 mm petri dishes w and w/o area limiting inserts
- EBT film in front of sample for retrospective dose determination
- Cells removed and plated for survival assay in 6well plates

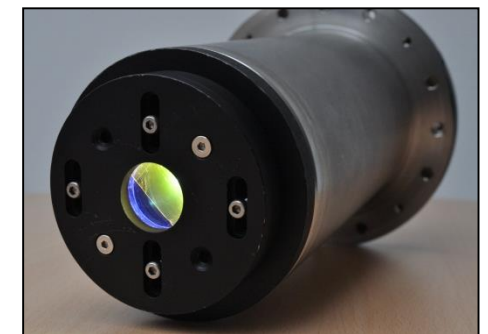
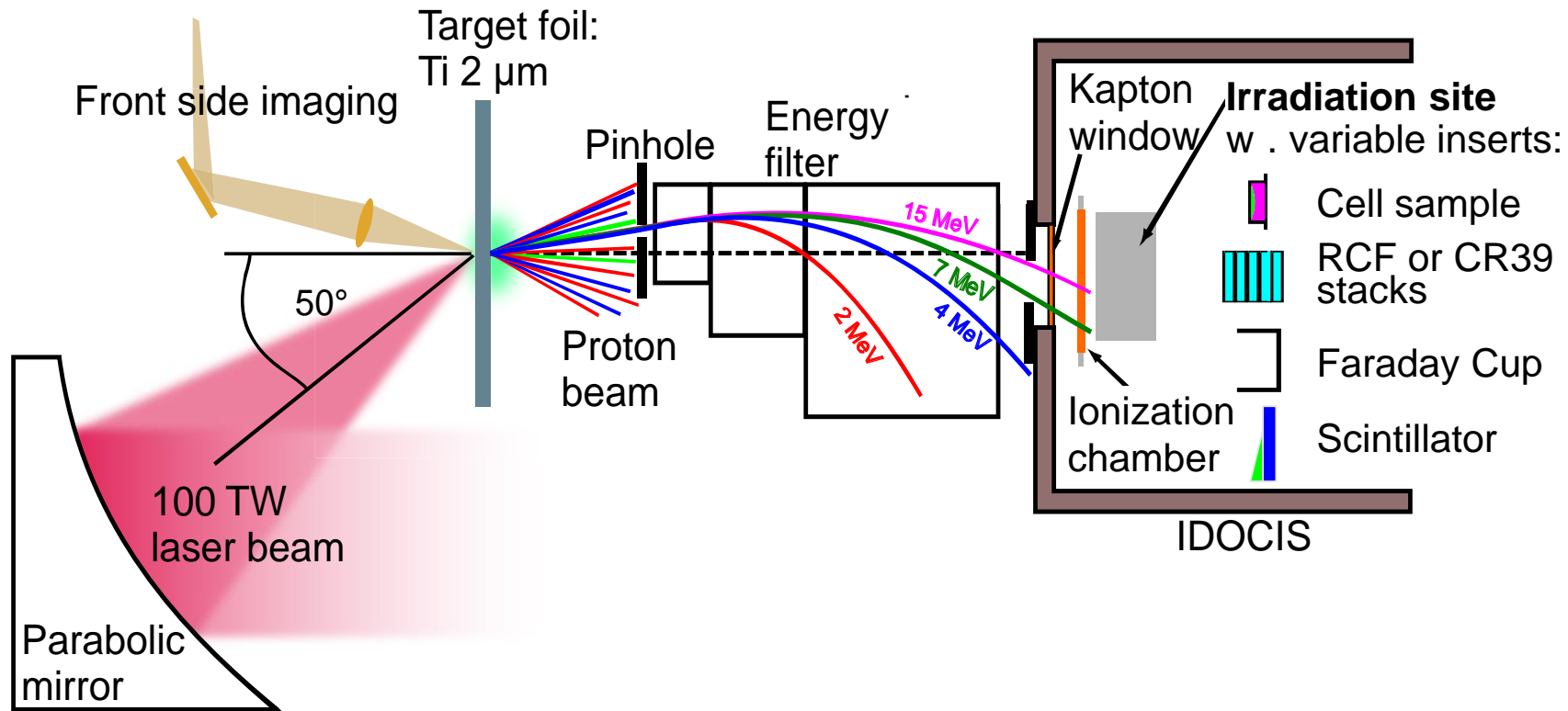


Bezeichnung	Abb.	Kultivierungseinheiten	Kultivierungsfläche pro Einheit
flexiPERM® micro12	②	12	0,3 cm ²
flexiPERM® slide	①	8	0,4 cm ²
flexiPERM® disc	⑤	4	1,8 cm ²
flexiPERM® conA	③	1	1,1 cm ²
flexiPERM® conB	④	1	3,1 cm ²

quadriPERM® in Kombination mit flexiPERM® slide und flexiPERM® micro12

Cell experiments with protons: Setup

All necessary components for cell irradiation:





Multiwell plates: base = 96 well geometry

wells	Area /well /cm ²	Diameter /cm
12	3.5	2.11
24	1.9	1.56
48	1.1	1.18

Cell culture inserts for further volue/area limitation; possible but much more effort



Further equipment available:



200 kV Isovolt X-ray tube

- reference irradiation
- Establishment of cell setup and handling parameter