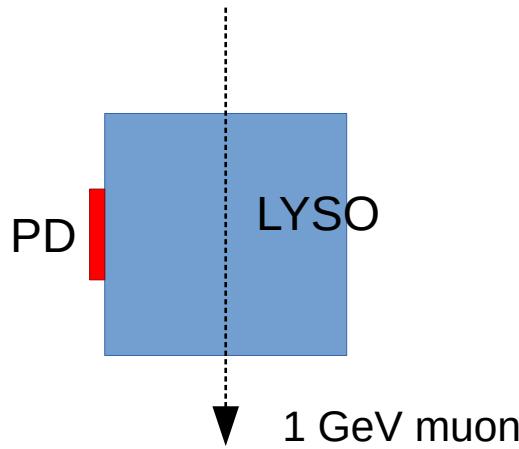
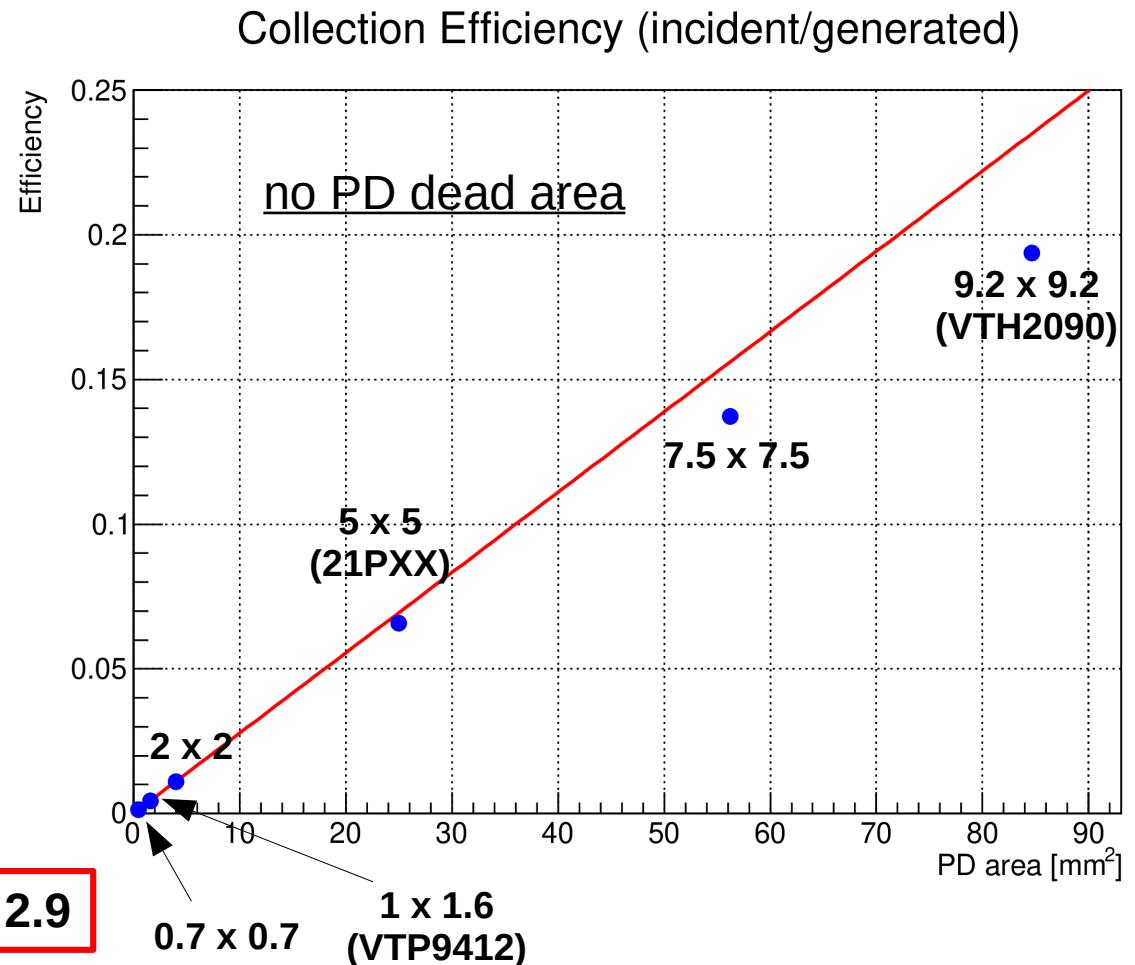


Light coll. eff. vs PD active area



- 3x3x3 cm³ cube
- Specular reflection coating with 98% reflectivity (VIKUITI)
- Rough surfaces (excluding PD side)
- Attenuation length in LYSO: 50 cm

Efficiency(9.2x9.2) / Efficiency(5x5) ~ 2.9



VTH2090 vs 21PXX (with dead area effect)

	Active area [mm ²]	Dead area [mm ²]	Light coll. eff. <i>(only active area)</i>	Light coll. eff. <i>(with dead area)</i>	Eff(dead)/Eff
VTH2090	84.6	163	0.1937	0.1418	0.732
21PXX	25	7.7	0.0657	0.0645	0.981

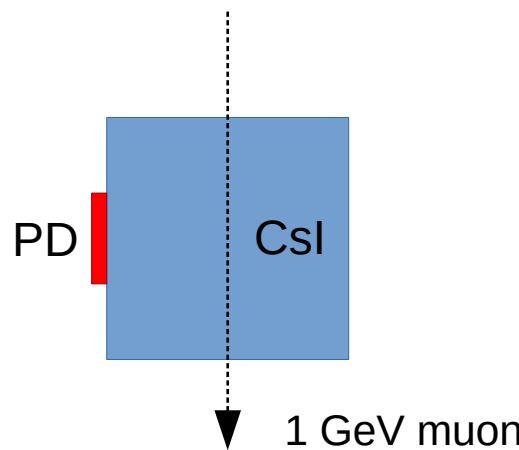
Efficiency(**VTH2090**) / Efficiency(**21PXX**) ~ 2.2

Including QE ratio:

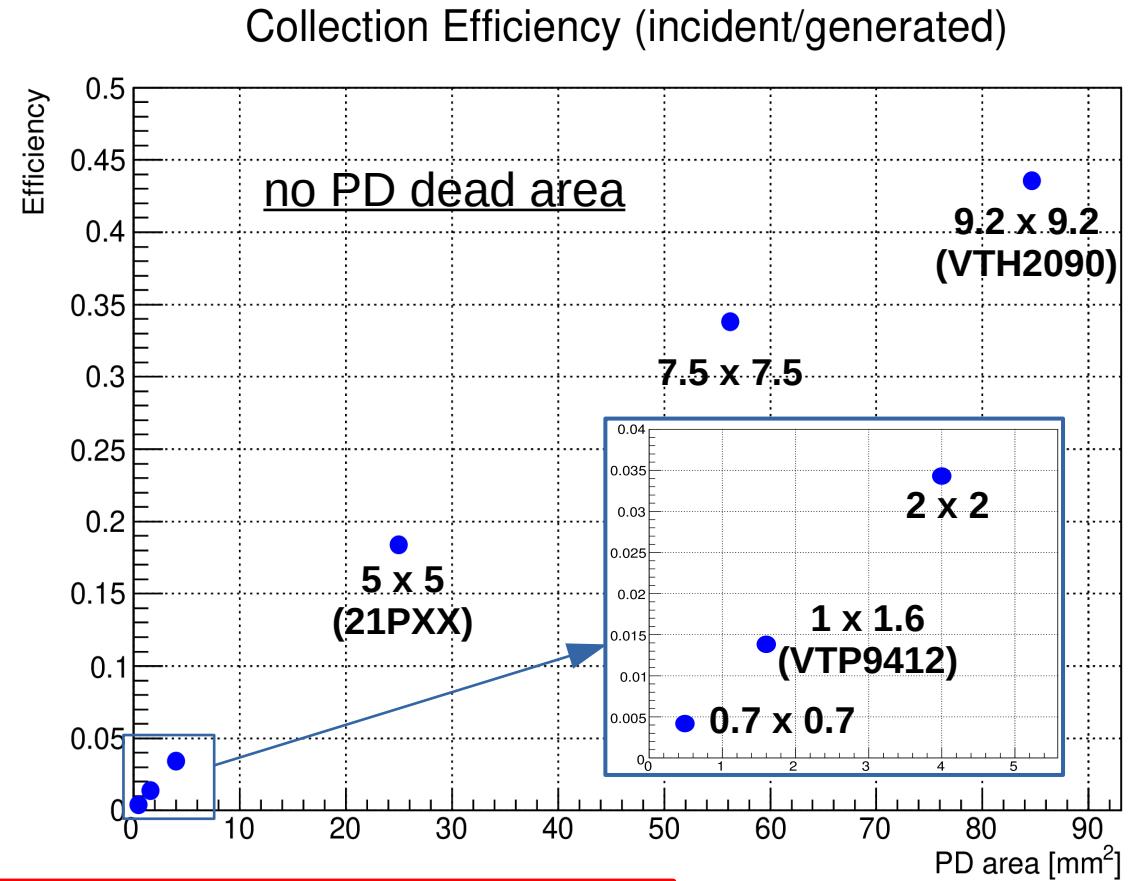
Signal(**VTH2090**) / Signal(**21PXX**) ~ 2.2 x 1.3 ~ 2.9

backup

Light coll. eff. vs PD active area



- 3x3x3 cm³ cube
- Specular reflection coating with 98% reflectivity (VIKUITI)
- Rough surfaces (excluding PD side)
- Attenuation length in CsI: 2.5 m



Efficiency(9.2x9.2) / Efficiency(5x5) ~ 2.4

Dead area effect

	Active area [mm ²]	Dead area [mm ²]	Light coll. eff. (only active area)	Light coll. eff. (with dead area)
VTH2090	84.6	163	0.436	0.253
21PXX	25	7.7	0.184	0.175
VTP9412	1.6	23	0.0138	0.0118

	Area(active) / Area(tot)	Eff(dead) / Eff
VTH2090	0.342	0.58
21PXX	0.764	0.95
VTP9412	0.064	0.86

Eff(9.2x9.2) / Eff(5x5) ~ 1.4