

# CYGNO simulations update

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CYGNO simulation working group

23/05/25

# CYGNO-04 preliminary

|                         | CYGNO-04        |                 |                                |                       |
|-------------------------|-----------------|-----------------|--------------------------------|-----------------------|
| Summary Table           | NR/yr 1-20 keV  | ER/yr 1-20 keV  | Reference                      | Comment               |
| GEM (TREX)              | 1.10E+03        | 9.27E+04        | T-REX GEM                      | scaled from CYGNO-1m3 |
| AcrylicBox (SNO)        |                 | 1.37E+04        | SNO acrylic                    | CYGNO-04 sim          |
| CameraBody              |                 | 5.19E+04        | Laubenstein@LNGS               | scaled from CYGNO-1m3 |
| CameraLens              |                 | 9.35E+04        | Laubenstein@LNGS               | scaled from CYGNO-1m3 |
| Cathode (Cu)            | 0.00E+00        | 9.20E+03        | Schrieber Cu                   | scaled from CYGNO-1m3 |
| Field Cage (Flex)       | 3.89E+02        | 7.14E+04        | Flex                           | scaled from CYGNO-1m3 |
| Cu Shielding            |                 | 7.57E+04        | 4 cm Schrieber + 6 cm OPERA Cu | CYGNO-04 sim          |
| <b>Total (internal)</b> | <b>1.49E+03</b> | <b>3.23E+05</b> |                                |                       |
| External Gamma          |                 | 1.00E+04        | SABRE gamma flux @LNGS         |                       |
| External Neutrons       | 7.50E+00        | 3.41E+00        | CUORE n flux @LNGS             |                       |
| <b>Total (external)</b> | <b>7.50E+00</b> | <b>1.00E+04</b> |                                |                       |
| <b>Tot</b>              | <b>1.49E+03</b> | <b>3.33E+05</b> |                                |                       |