| Optics and Detector wafer quantities for LAT Receiver options for each LAT | | | | |
|---|---|---|---|---|
| | | | | |
| Telescope design | CD | CD | TMA | TMA |
| # cryostats per telescope | 1 | 1 | 7 | 3 |
| # tubes per cryostat | 19 | 85 | 19 | 53 |
| total # tubes | 19 | 85 | 133 | 159 |
| **window aperture (cm)** | **40** | **18** | **18** | **18** |
| detector wafers per tube* | 4 | 1 | 1 | 1 |
| total detector wafers | 76 | 85 | 133 | 159 |
| detector modules per tube* | 6 | 1 | 1 | 1 |
| total detector modules | 114 | 85 | 133 | 159 |
| silicon lenses per tube | 3 | 3 | 3 | 3 |
| silicon lens diameter (cm) | 40 | 20 | 20 | 20 |
| **total # silicon lenses** | **57** | **255** | **399** | **477** |
| window material | UHMWPE | silicon/lens | siicon/lens | siicon/lens |
| Non-lens windows | 19 | 0 | 0 | 0 |
| | | | | |
| Filters option 1: based on SO/CCAT configuration | | | | |
| alumina filters per tube | 1 | 1 | 1 | 1 |
| IR blocking filters per tube | 4 | 4 | 4 | 4 |
| Low pass filters per tube | 2 | 2 | 2 | 2 |
| **total alumina filters** | **19** | **85** | **133** | **159** |
| **total IR blocking filters** | **76** | **340** | **532** | **636** |
| **total low pass filters** | **38** | **170** | **266** | **318** |
| | | | | |
| Filters option 2: based on the SPT-3G configuration | | | | |
| Stack of 10x 0.125” zotefoam HD30 | 1 | 1 | 1 | 1 |
| 15 mm thick alumina | 1 | 1 | 1 | 1 |
| Cardiff LPE | 1 | 1 | 1 | 1 |
| **Total zotefoam stacks** | **19** | **85** | **133** | **159** |
| **Total alumina filters** | **19** | **85** | **133** | **159** |
| **Total LPEs** | **19** | **85** | **133** | **159** |
| | | | | |
| | | | | |
| mapping speed ratio estimate | 1.00 | 1.24 | 1.10 | 1.30 |
| * Note that the "4 wafers" in the 19 tube design are based on 3 hex modules plus 3 diamo | | | | |