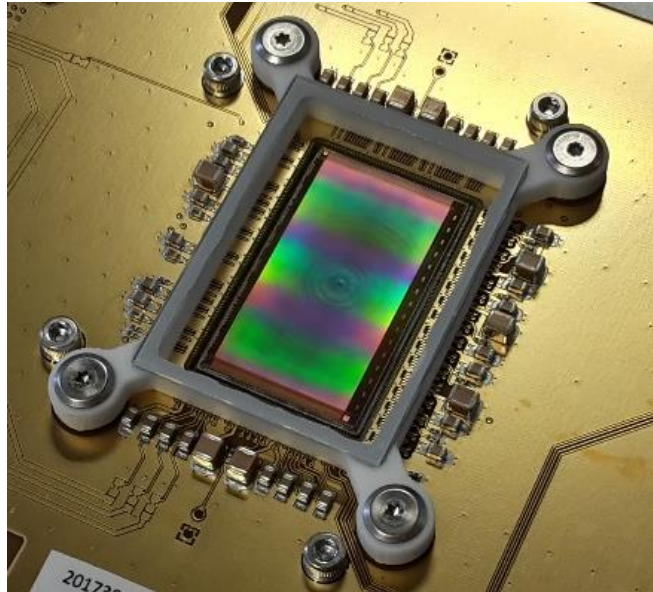


## CAE301 “ELFIS”

The “ELFIS” image sensor combines a unique set of desired image sensor features, the result of Caeleste’s “beyond state of the art” design legacy and LFoundry’s LF11IS technology with BSI.



### Features

- 1920x1080 pixels
- 15  $\mu\text{m}$  pixel pitch
- Global shutter using a “GS” CMOS technology with buried storage node
- TID, SEU and SEL rad-hard design
- QE > 90% by backside illumination
- Dual Gain:
  - High Gain:  $20\text{ke}^-$  (4T Mode) /  $10\text{ke}^-$  (GS mode – SN limited)
  - Low Gain:  $163\text{ke}^-$
- Image Lag < 0.1%
- PLS 1/200 at 830nm and 1/700 at 465nm
- $\text{MTF}_{\text{Nyquist}} > 0.55$  (thin epi)
- Read noise using CDS  $6.5 \text{e}^-_{\text{RMS}}$
- $\text{Q}_{\text{FW}}$  in HDR + GS (IWR) mode  $163\text{ke}^-$
- 76 FPS at 40MHz clock speed
- “True” (motion artifact free) High Dynamic Range method based on the patented “3-level TG” method, reaching a single exposure, single integration time, synchronous dynamic range > 90dB
- Ready for stitching to create larger pixel arrays

### Application

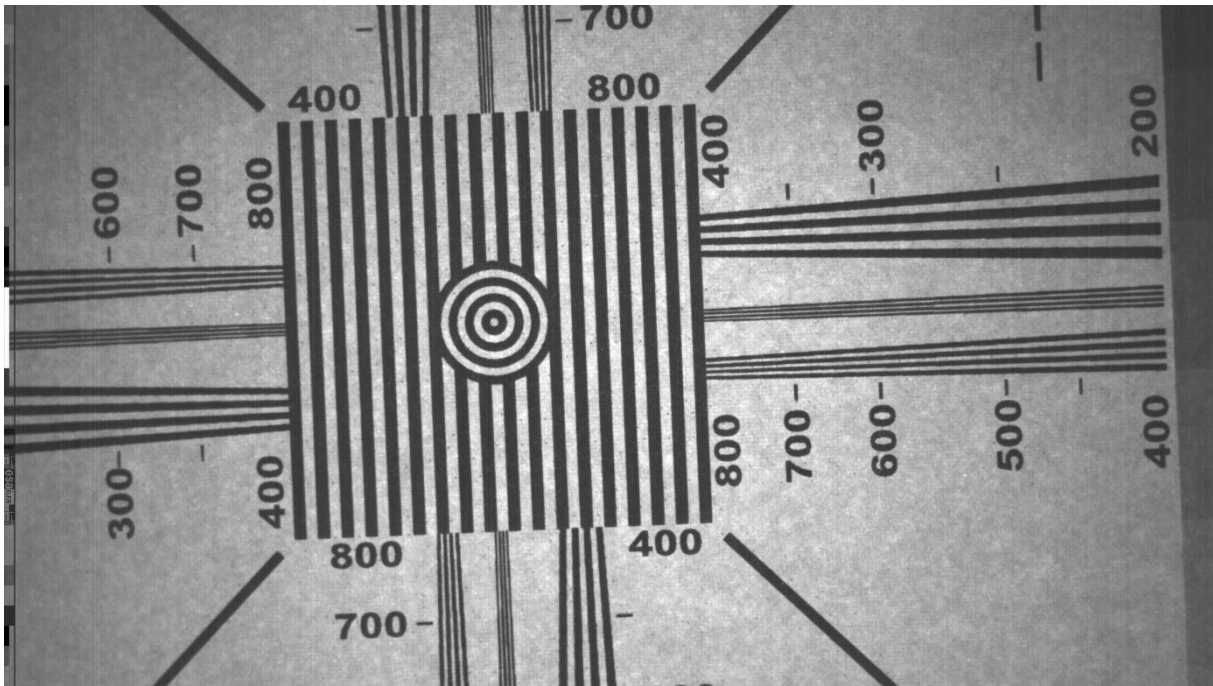
Space missions earth observation  
Space missions sky observation  
Scientific imaging  
Imaging in nuclear environment

### More Information

sales@caeleste.be

see also <http://caeleste.be/wp-content/uploads/2019/07/whitepaper-ELFIS.pdf>

Example Image:



ELFIS RAW Image



First HDR+GS image