

Products and Services

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Focal Plane Arrays

QmagiQ manufactures and sells a variety of standard and custom SLS and QWIP focal plane arrays. All FPAs are spec-compliant, and delivered either in an LCC or on a customer-supplied substrate. A rigorous test report and the QmagiQ Guarantee accompanies each FPA.

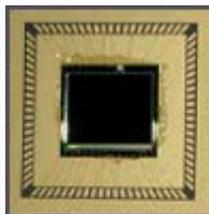
Below is a short list of some of the standard focal planes QmagiQ offers:

- **Falcon 256:**
320x256 FPA, mid-format 1-Color LWIR QWIP, on ISC9705 ROIC
- **Hawk 512:**
640x512 FPA, large-format 1-Color LWIR QWIP, on ISC9803 ROIC
- **Eagle 256:**
320x256 FPA, mid-format 2-Color MWIR/LWIR QWIP, on ISC0006 ROIC

Custom detector design is available to tailor the response of our focal plane arrays to the unique spectral requirements of your application with wavelength ranges extending out beyond 12 μ m.

We also offer custom FPAs built on the ROIC of your choice. If you are already using this ROIC, you can expand your product line into the LWIR imaging/thermography space by having QmagiQ build an SLS or QWIP FPA on it. Your existing system stays the same, all you may need to do is switch to a lens with a LWIR passband.

Contact us to find out how you can get a QWIP FPA on your ROIC.



FALCON 256

Detailed FPA Test Report (PDF) 

| Single Pixel Tests | | | |
|--------------------------------------|---------------|----------------------------|--|
| PARAMETER | VALUE | UNITS | CONDITIONS |
| Pixel size | 28x28 | μm^2 | |
| Peak spectral response | 8.6 ± 0.2 | μm | |
| Full width at half maximum | 0.7 ± 0.2 | μm | |
| Blackbody responsivity | 15 | mA/W | Looking at a chopped 500-K blackbody source through an F/2 window, 1V bias |
| Conversion efficiency | 0.025 | el/ph | 1V bias |
| Photoconductive gain | 0.2 | - | 1V bias (peak value of 0.3-0.4 at -3V bias) |
| Quantum efficiency | 12 | % | 1V bias |
| Blackbody detectivity D^*_{BB} | $1\text{e}9$ | Jones | 77-K operating temperature |
| Peak detectivity D^*_{peak} | $1\text{e}10$ | Jones | 77-K operating temperature |
| Dark current density | $5\text{e-}4$ | A/cm^2 | 77-K operating temperature |
| FPA Tests | | | |
| PARAMETER | VALUE | UNITS | CONDITIONS |
| Array format | 320x256 | - | |
| Pixel pitch | 30 | μm | |
| Optical response | 20 ± 5 | $\text{mV}/^\circ\text{C}$ | F/4 cold shield, ROIC gain setting of 1, 1V bias, room temperature scene |
| Uncorr. response uniformity | 2 ± 0.5 | % | Aperture shading effects removed |
| Corrected response uniformity | 0.04-0.07 | % | 30°C scene temperature after a two-point NUC at 20°C and 40°C |
| Temporal NE Δ T mean | 18-25 | mK | F/4, 68-K operating temperature, 16 ms integration time, 60-Hz frame rate |
| Temporal NE Δ T standard dev. | 3 ± 1 | mK | " |
| Spatial NE Δ T mean | 12-17 | mK | " |
| Operating temperature | 68-70 | K | Dark current and noise increase with operating temperature |
| Overall operability | >99.5 | % | Actual value depends on performance specs. See QF6 sample test report. |
| ISC9705 power dissipation | ~35 | mW | |

For details on the operating characteristics of the ISC9705 ROIC, go to <http://www.indigosystems.com>

Sensor Engines

Any of QmagiQ's FPAs are also available as cryo-cooler packaged sensor engines or integrated dewar cooler assemblies (IDCAs). **Contact us** with your system requirements and we'll determine a sensor engine configuration to suit your needs.

Camera Systems

Full turn-key custom camera systems are available for any QmagiQ focal plane array configuration. **Contact us** with your specific infrared imaging application details for more information.

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