Products and Services

Focal Plane Arrays | Sensor Engines | Camera Systems

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.

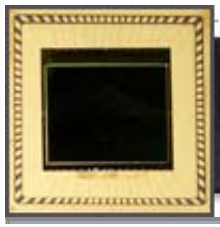
Below is a short list of some of the standard focal planes QmagiQ offers:

- **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 12µm.

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.



HAWK 512

Detailed FPA Test Report (PDF)

Single Pixel Tests

PARAMETER	VALUE	UNITS	CONDITIONS
Pixel size	23x23	μm²	
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}	1e9	Jones	77-K operating temperature
Peak detectivity D^*_{peak}	1e10	Jones	77-K operating temperature
Dark current density	5e-4	A/cm²	77-K operating temperature

FPA Tests

PARAMETER	VALUE	UNITS	CONDITIONS
Array format	640x512	-	
Pixel pitch	25	μm	
Optical response	20 ± 5	mV/°C	F/2 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	0.05-0.10	%	30°C scene temperature after a two-point NUC at 20°C and 40°C
Temporal NEΔT mean	25-30	mK	F/2, 68-K operating temperature, 5-10 ms integration time, 16-Hz frame rate
Temporal NEΔT standard dev.	3 ± 1	mK	"
Spatial NEΔT mean	13-18	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 QH2 sample test report.
ISC9803 power dissipation	~75	mW	

For details on the operating characteristics of the ISC9803 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 inforation.