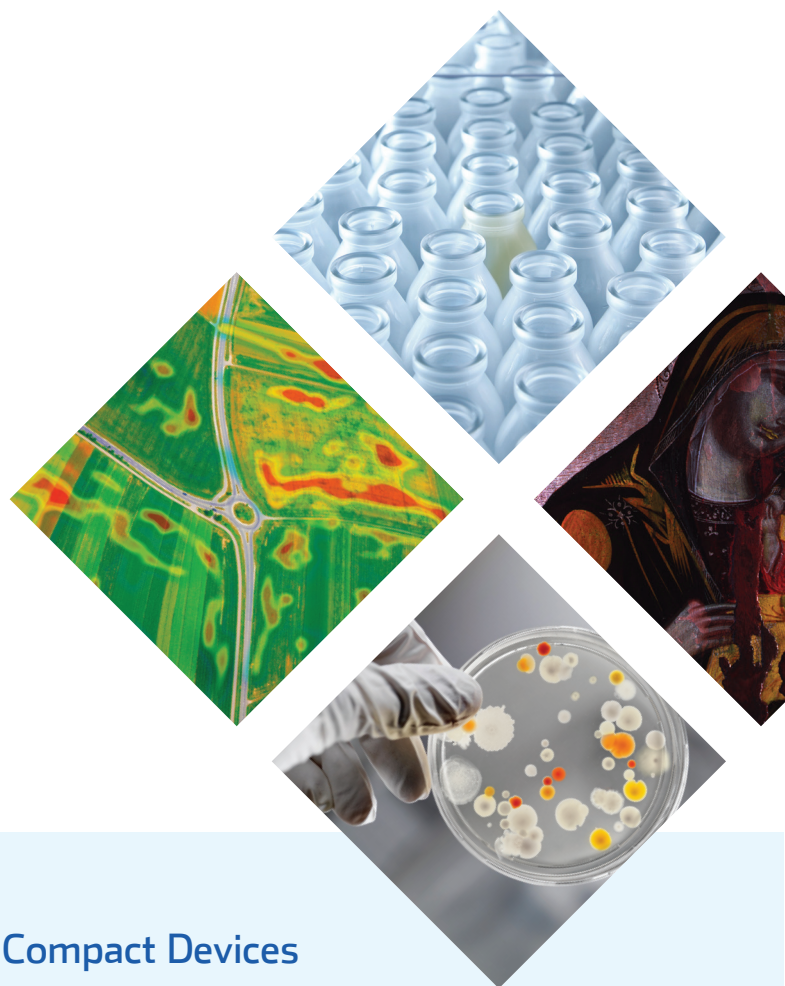
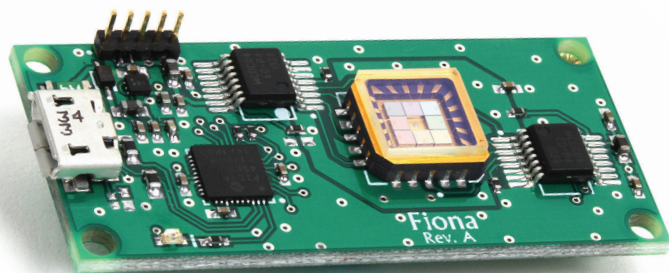


PixelSensor™

Multispectral Sensors

PIXELTEQ

micro-patterned filters | sensors | cameras



Multispectral Sensors for Compact Devices

PixelSensor™ multispectral sensors use exclusive on-chip filtering to pack up to 8 wavelength-selective photodiodes into a compact 9x9mm array format for simpler and smaller optical devices. One PixelSensor™ replaces multiple components, helping OEMs shrink multi-wavelength instruments for applications including *in vitro* diagnostics, biochemical assays and colorimetry applications.

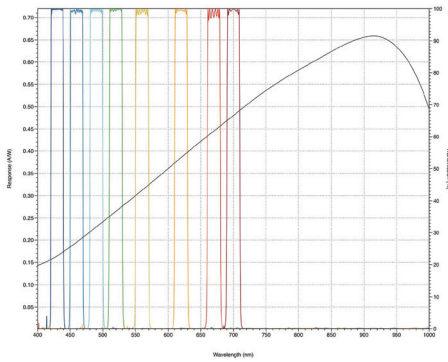
The unique, wafer-level optical filters split the spectrum into 8 discrete color bands and suppress out-of-band background light, improving contrast and sensitivity. Customized OEM versions are available with user-defined spectral bands. With narrow band VIS-NIR selectivity, the sensor arrays are available both with and without an OEM electronics board.

The OEM electronics board is designed for easy integration into customers' analytical equipment and provides a smaller footprint (45.72x21.34mm) and faster time-to-market than traditional sensor technology, offering a cost-effective solution. The parallel channel design results in no moving parts and faster measurements than discrete optics designs and spectrometers. Designed for low noise and fast response time, the 20-pin LCC package can be surface or socket mounted.

The optional PixelSensor™ OEM electronics board and accessories and simple-to-use software interface provide designers with tools for rapid prototyping and development – to help quickly move your device from concept to scalable production.

pixelteq.com

Spectral Response | PixelSensor™ 8-band VIS

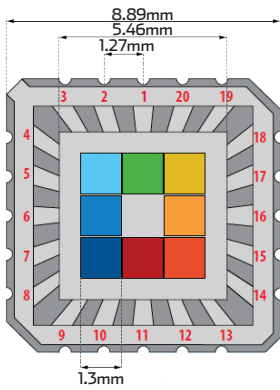


Standard & Custom Wavelengths Available

| PixelSensor™ Filters | |
|----------------------|-----------|
| CWL (nm) | FWHM (nm) |
| 425* | 10 |
| 455* | 10 |
| 465 | 30 |
| 485* | 10 |
| 512 | 26 |
| 515* | 15 |
| 555* | 15 |
| 558 | 36 |
| 575 | 30 |
| 610 | 30 |
| 615* | 15 |
| 660* | 20 |
| 661 | 38 |
| 695* | 10 |
| 720 | 50 |
| 850 | 30 |
| Color Gels | |
| Cyan | Red |
| Magenta | Green |
| Yellow | Blue |

*Included in standard configuration

Photodiode Array Dimensions



Photodiode Performance Characteristics

| Characteristic | Symbol | Test | Min | Typical | Max | Unit |
|-------------------------|-------------------|---|-----|---------------------|----------|-------|
| Dark current | I_d | $V_R = 10V$ | | 2 | 8 | nA |
| Shunt resistance | R_{SH} | $V_R = 10mV$ | | 100 | | MΩ |
| Junction capacity | C_j | $V_R = 0V, f=100kHz$ $V_R = 50V, f=100kHz$ | | 6 0.6 | 7 0.7 | pF |
| Spectral range | λ_{range} | Spot scan | 400 | | 1100 | nm |
| Breakdown voltage | V_{BR} | $I = 10\mu A$ | | 75 | | V |
| Noise equivalent power | NEP | $V_R = 5V @ \lambda = peak$ | | 5×10^{-14} | | W/√Hz |
| Response time | t_r | $R_L = 50\Omega, V_R = 50V$ | | 6.0 | | ns |
| Absolute maximum rating | | | | | | |
| Reverse voltage | V_{BR} | | | 75 | | V |
| Operating temperature | T_o | | -40 | to | +80 | °C |

Benefits

- 8-band sensor array in 9x9mm footprint
- Available with or without OEM electronics board (45.72x21.34mm)
- Simplified optics for miniaturized devices
- Narrow band VIS-NIR selectivity (400-1000nm)
- OEM versions available

Customizable Options

- Optical filter specification
- Number of channels
- Package type
- Breakout board & light guide tube accessories

Applications

- Biomedical instrumentation
- Color meters & monitors
- Industrial sorting & sensing
- Portable optical sensors
- OEM multispectral devices

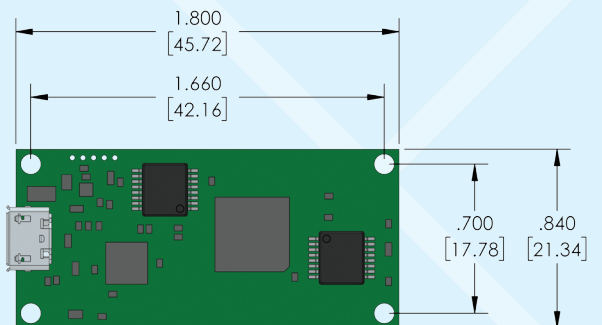
LCC Sensor

| | |
|------------------|--------------------------------------|
| Spectral filters | Standard & custom 10 - 100nm FWHM |
| Photodiodes | Si, 1.0 x 0.8mm |
| Package | LCC 20 |

OEM Board Specifications

| | |
|------------------|-----------------------------|
| Integration time | 1-1024ms |
| Gain reference | 20-5120nA |
| Interface | USB 2.0 |
| Protocol | HID-compliant |
| Software | Windows 32/64bit compatible |

OEM Board Dimensions



Contact our engineers today to discuss your application.

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