

PixelSensor™

Multispectral Sensors

Multispectral Sensors for Compact Devices

PixelSensor™ multispectral sensors use on-chip filtering to pack up to 8 wavelength-selective photodiodes into a compact 9 mm x 9 mm array for simple integration into optical devices. A single PixelSensor replaces multiple components, helping OEMs shrink multi-wavelength instruments for applications including in vitro diagnostics, biochemical assays and colorimetry applications.

PixelSensor's wafer-level optical filters split the spectrum into 8 discrete color bands and suppress out-of-band background light, improving contrast and sensitivity. PixelSensor offers narrowband selectivity (400-1000 nm), is available in OEM versions with user-defined spectral bands, and can be specified with optional electronics board and accessories for rapid prototyping and development.

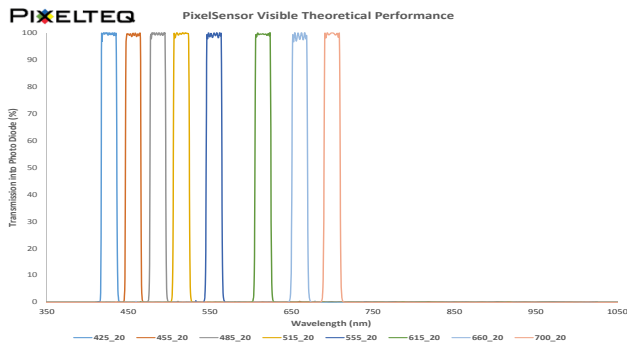


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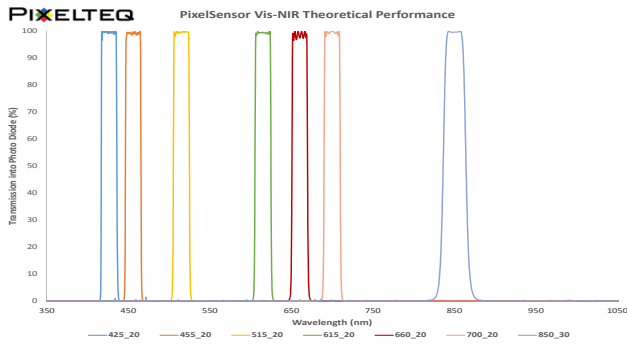
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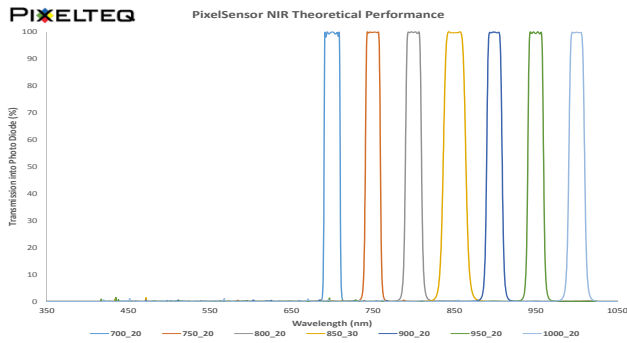
VIS Spectral Response



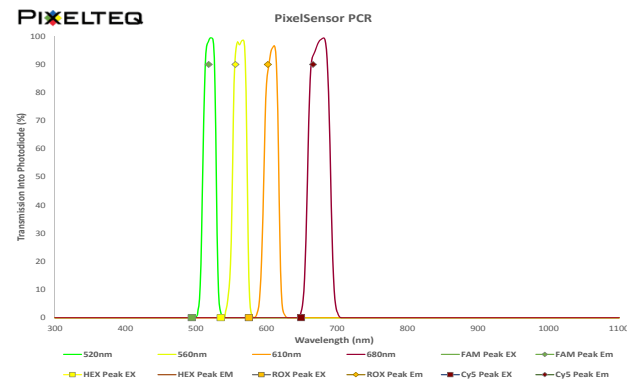
VIS-NIR Spectral



NIR Spectral



PCR Spectral



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	range	Spot scan	400		1100	nm
Breakdown voltage	V_{BR}	$I = 10\mu A$		75		V
Noise equivalent power	NEP	$V_R = 5V @ = peak$		5×10^{-14}		
Response time	t_r	$R_L = 50\Omega, V_R = 50V$		6.0		ns

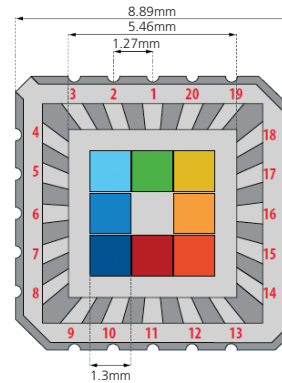
Absolute maximum rating

Reverse voltage	V_{BR}			75		V
Operating temperature	T_O			-40 to +80		°C

LCC Sensor

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

LCC Dimensions



Optional Evaluation Housing



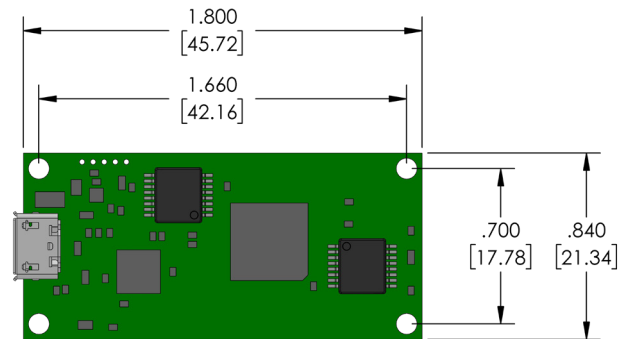
Mechanical fixture including:

- 15.2 mm light guide
- SM05 lens adapter
- Fiber optic adapter for 74-UV collimating lens

OEM Board Specifications

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

OEM Board Dimensions (inches/mm)



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