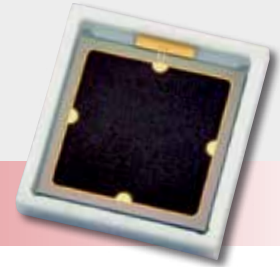


# Avalanche Photodiode

For High Energy Radiation Detection Applications, Molecular Imaging

## AVALANCHE PHOTODIODES ■

Large Area Si-APDs – UV-Enhanced APDs



## Large Area Si-APDs – UV-Enhanced APDs

### Applications

- Nuclear medicine
- Fluorescence detection
- High energy physics
- Medical imaging
- Radiation detection
- Particle physics
- Instrumentation
- Environmental monitoring

### Features and Benefits

- High quantum efficiency
- Low dark currents
- Easy coupling to scintillator crystals
- Immunity to electromagnetic fields
- Custom packaging available
- Excellent timing resolution
- RoHS compliant
- Customization available upon request

### Product Description

The C30739ECERH Silicon Avalanche Photodiode (APD) is intended for use in a wide variety of broadband low light level applications covering the spectral range from below 400 to over 700 nanometers. It has low noise, low capacitance and high gain. It is designed to have an enhanced short wavelength sensitivity, with quantum efficiency of 60 % at 430 nm.

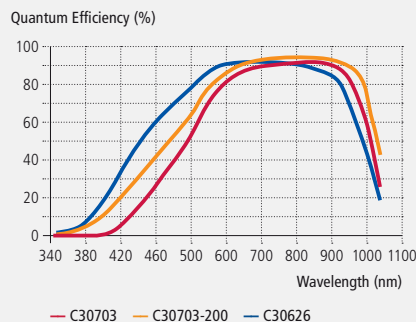
The standard ceramic carrier package allows for easy handling and coupling to scintillating crystals such as LSO and BGO. Combined with the superior short wavelength responsivity, it makes this APD ideal in demanding applications such as Positron Emission Tomography (PET).

The C30626FH and C30703FH series are large area Si APDs in flat pack packages for either direct detection or easy coupling to scintillator crystals.

The C30626 uses a standard reach through structure and has peak detection at about 900 nm. The C30703 is enhanced for blue wavelength response and has peak quantum efficiency at ~ 530 nm. These APDs are packaged in a square flat pack with or without windows or on ceramics. The no-window devices can detect direct radiation of X-rays and electrons at the energies listed, and the windowed packages are best for easy scintillator coupling.

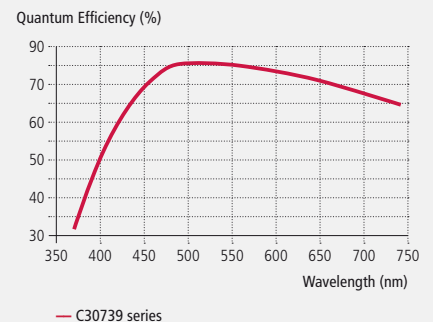
Graph 1

### Quantum Efficiency vs. Wavelength



Graph 2

### Quantum Efficiency vs. Wavelength



Product Table

### Large Area Si-APDs – UV-Enhanced APDs

Part Number	Photo Sensitive Diameter	Responsivity	Dark Current	Spectral Noise Current	Capacitance @ 100 KHz	Response Time	NEP	Vop Range
Unit	mm	A/W	nA	pA/√Hz	pF	ns	fW/√Hz	V
C30626FH	5 x 5	22 (@900 nm)	250	0.5	30	5	23(@900 nm)	275 - 425
C30703FH	10 x 10	16 (@530 nm)	10	0.7	100	5	40(@530 nm)	275 - 425
C30703FH-200	10 x 10	16 (@530 nm)	10	0.7	60	5	40(@530 nm)	275 - 425
C30739ECERH	5.6 x 5.6	20 (@430 nm)	50	1.4	60	2	-	275 - 425
C30739ECERH-2	5.6 x 5.6	52(@430 nm)	50	2	60	2	-	275 - 425