

## LYNX™ Silicon Photomultiplier Module LynX-A-33-050-T1-A



LYNX™

Excelitas' LynX™ Silicon Photomultiplier Module (LynX-A-33-050-T1-A) delivers high PDE, high dynamic range, high linearity and an excellent S/N ratio, as compared to traditional PMTs and other SiPM solutions.

Excelitas' new LynX™ Silicon Photomultiplier Module is a compact, easy-to-use, analogue low light level detection (L<sup>3</sup>D) module employing Excelitas' leading-edge C30742 Series Silicon Photomultiplier (SiPM) chip in a hermetic TO-8 package with thermoelectric cooler, a stable voltage power supply circuit, and a low noise transimpedance amplifier.

With this compact voltage output module, we have optimized the preamplifier gain to obtain maximum dynamic range and linearity with the SiPM at pre-set operating voltage. It outperforms other SiPM solutions in key performance parameters such as higher photon detection efficiency (PDE) and better signal-to-noise ratio across the full 400 nm - 900 nm wavelength spectrum.

Excelitas' new LynX™ SiPM module is offered as a standard, commercial-off-the-shelf (COTS) product. It contains a 3x3 mm<sup>2</sup> active area SiPM with 50x50 μm<sup>2</sup> microcells for optimum fill factor and PDE. Other chip configurations are available upon request.

In addition to our standard, off-the-shelf SiPM module, Excelitas also offers customized modules tailored from our standard designs. Depending upon customer requirements, modifications can include bandwidth optimization, FC-connectorized packaging, photon counting digital output, and customized testing.

### Key Features

- High photon detection efficiency:
  - >35 % @ 510 nm (typ.)
  - >17 % @ 700 nm (typ.)
- Excellent signal to noise ratio as compared to traditional PMTs
- High dynamic range and linearity
- Low NEP
- Built-in TE cooler
- Compact and user-friendly

### Applications

- Fluorescence measurement
- Analytical instrumentation
- Flow Cytometry

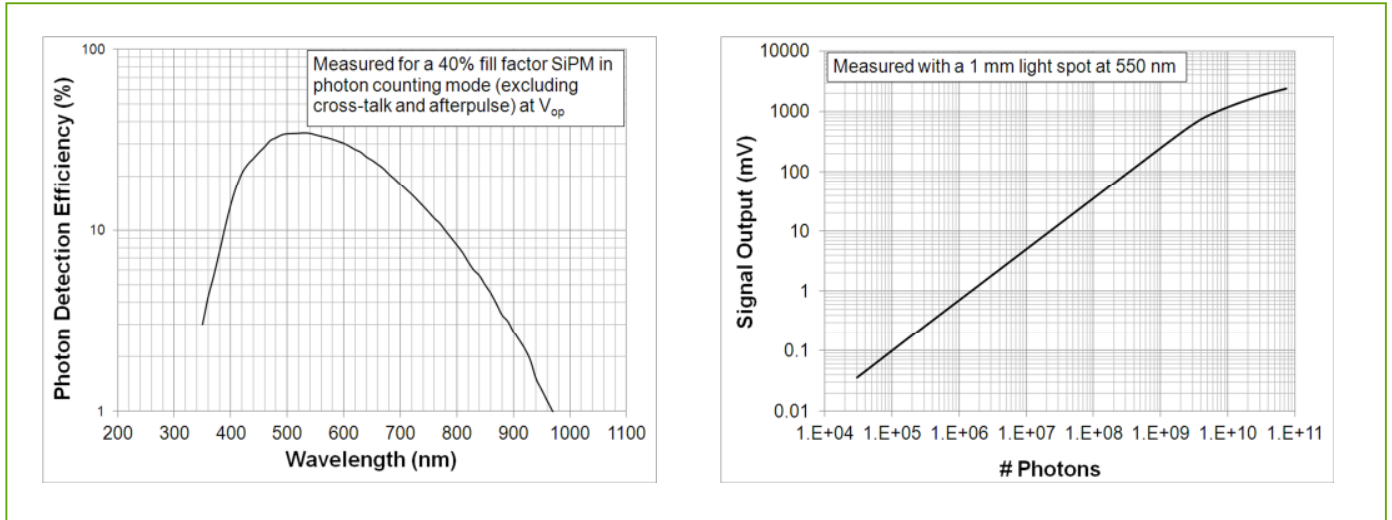
# LynX-A-33-050-T1-A

## LYNX™ Silicon Photomultiplier Module

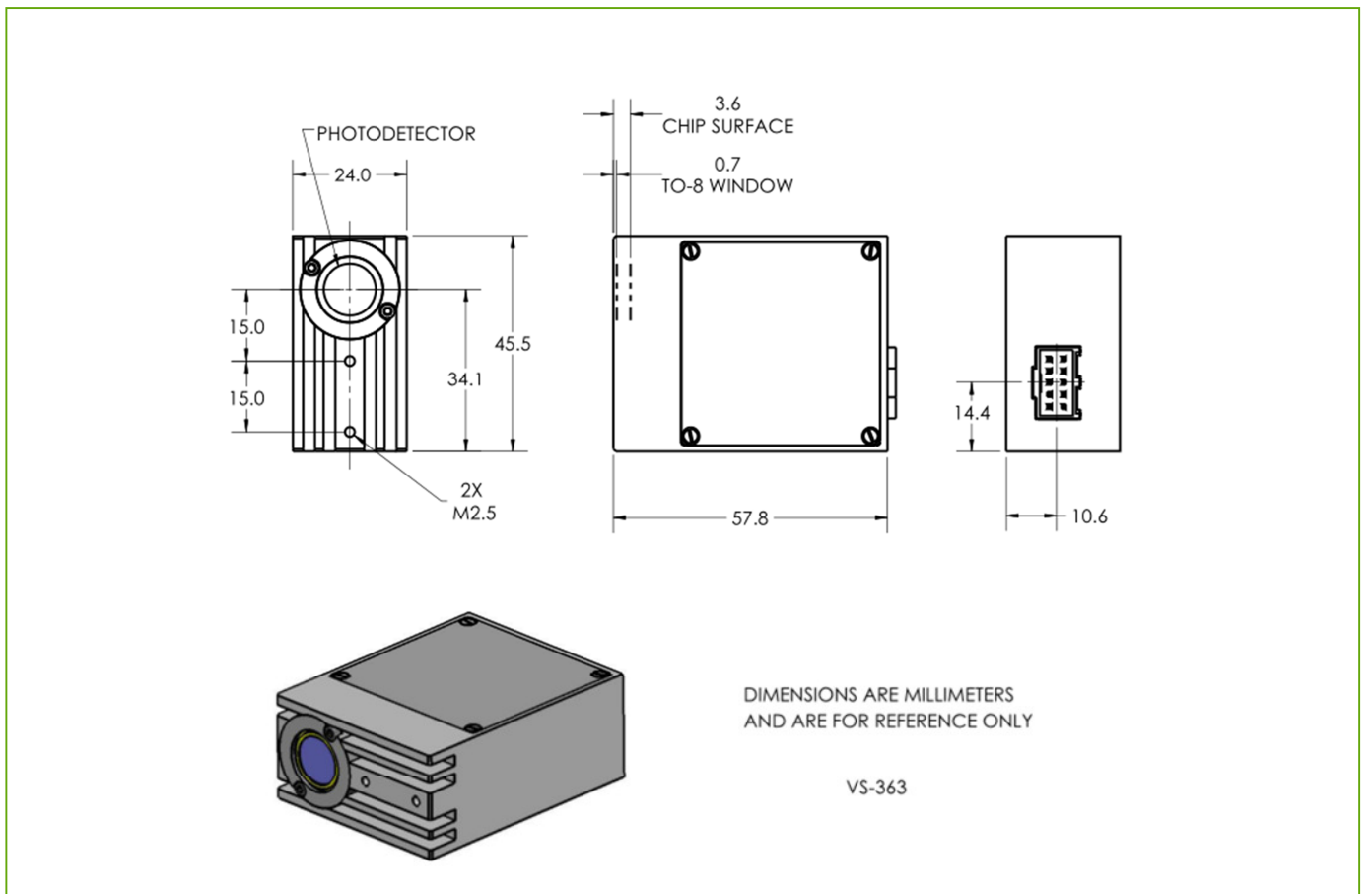
Table 1. Electro-optical characteristics at case temperature of 22°C

<b>Detector</b>					
	<b>Condition</b>	<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>	<b>Unit</b>
Effective Active Area			3 x 3		mm <sup>2</sup>
Number Of Microcells			3600		
Microcell Size			50 x 50		μm <sup>2</sup>
Spectral Bandwidth		350		950	nm
Peak Wavelength			510		nm
Max. PDE <small>at peak wavelength</small>			35		%
Dark counts		30	50	100	K counts/s
<b>Module</b>					
<b>Parameter</b>	<b>Condition</b>	<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>	<b>Unit</b>
Positive Supply Voltage		4.5	5	5.5	V
Negative Supply Voltage		-4.5	-5	-5.5	V
Positive Supply current			60	200	mA
Negative Supply current			25	30	mA
TEC voltage supply		+1.9	+2.0	+2.1	V
TEC supply current			500	1000	mA
Power Up Settling time			15		s
Analog Output Voltage	High impedance 50 Ohm			+5	V
				+1	V
Responsivity	@500 nm		0.83		V/nW
Bandwidth			1		MHz
NEP			0.43		fW/(Hz) <sup>1/2</sup>
Response time			200		ns
Output offset voltage		-0.4		-0.2	mV
Storage Temperature		0		+40	°C
Operating Temperature		+5		+40	°C

**Performance**



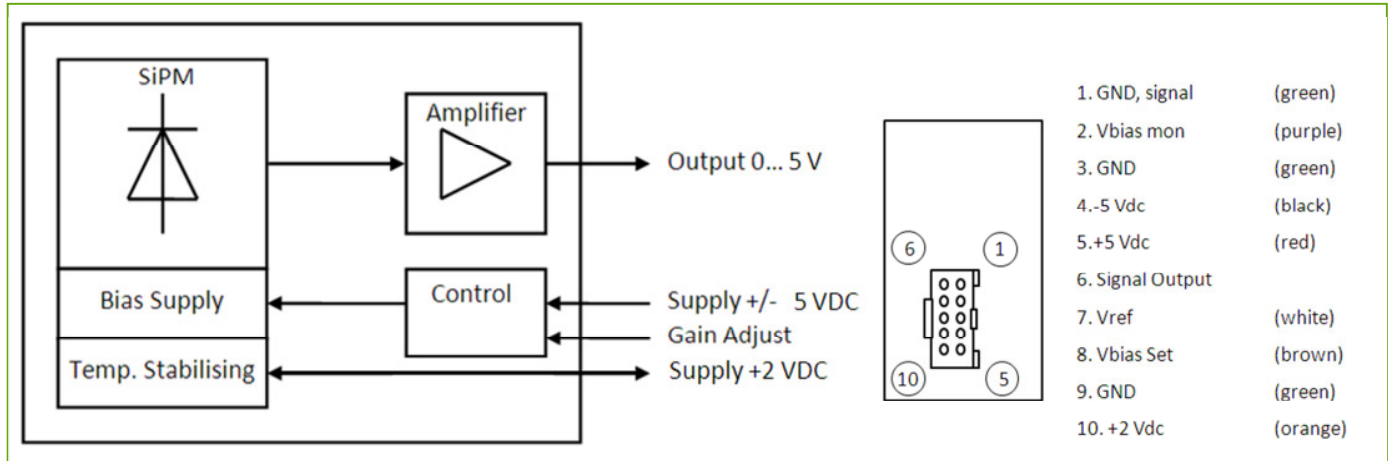
**Physical Configuration**



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## LYNX™ Silicon Photomultiplier Module

### SiPM Block Diagram and Module Pinout



### About Excelitas Technologies

Excelitas Technologies is a global technology leader focused on delivering innovative, customized solutions to meet the detection, lighting, and other high-performance technology needs of OEM customers.

From medical applications to analytical instrumentation, clinical diagnostics, industrial, safety and security, and aerospace and defense applications, Excelitas Technologies is committed to enabling our customers' success in their end-markets.

Excelitas Technologies has approximately 3,000 employees in North America, Europe and Asia, serving customers across the world.

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