

LYNRED Linear PEGA

(600x3) x4 – 30 μ m pitch – MCT - MW to VLW

LYNRED Linear PEGA is a **large linear detector** specially tailored for **earth observation** applications from MWIR up to VLWIR spectral range.

Based on LYNRED space proven MCT technology, LYNRED Linear PEGA detector, developed in the frame of TRISHNA mission offers the **highest level in terms of performance** (100% operability, high frame rate, large dynamic range...) and **versatility** (compatible design with staggered/butted configuration, external TDI, gain selection, integration time adjustment per readout line...).

SPECIALLY DESIGNED FOR EARTH OBSERVATION IMAGING APPLICATIONS



**MULTISPECTRAL AND MULTI LINEAR
ARRAY INFRARED DETECTOR**



**TAILORED ARCHITECTURE
FOR PUSHBROOM AND
WHISKBROOM INSTRUMENTS**



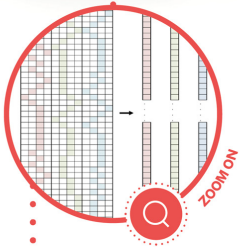
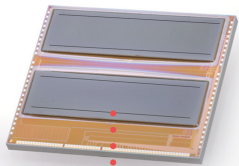
**VERSATILE AVAILABLE
CONFIGURATIONS**



**FROM 600 PIXELS UP TO
>3,000 PIXELS PER LINE**

SPACE





12 READOUT LINES
(3 PER CHANNEL)
OF **600** PIXELS
AT ROIC LEVEL



VERSATILE
ARCHITECTURE



100%
OPERABILITY



SPACE PROVEN
ARCHITECTURE



ON BOARD
TRISHNA MISSION



	Nominal configuration	On demand
ARRAY FEATURES		
Sensitive array	■ 4 channels [8 – 12µm] ■ 2 arrays (LWIR & VLWIR)	■ MWIR/LWIR/VLWIR [3 – 14µm]
Format & Pixel pitch	■ 9 readout lines of 600 pixels ■ 30 µm pixel pitch	■ 1 to 12 readout lines (3 readout lines per channel)
Operating temperature	■ 60K	■ [50K – 110K]

ROIC (READ-OUT INTEGRATED CIRCUIT)		
ROIC architecture	■ Snapshot integration type (IWR & ITR mode) ■ External TDI (3 readout line per channel) ■ 1 analog output per readout line (Pseudo-differential mode, 2.6V maximum output voltage swing)	
ROIC main functionalities	■ Pixel selection (1 among 4 for each column) ■ Integration time adjustment per readout line ■ Gain selection (1 among 7) per readout line ■ Readout line deactivation for power saving ■ Anti-blooming	
Operating characteristics	■ Nominal Frame rate: 4.5 kHz @3MHz pixel rate (Available operation up to 8MHz pixel rate) ■ Integration time: From 15 µs up to (Frame time – 15µs)	
Charge Handling Capacity	■ 7 gains available: 3, 4.3, 7.3, 10.8, 13.8, 15.1, 18.1 Me-	

TYPICAL PERFORMANCES (NOMINAL CONFIGURATION)		
Detection efficiency	■ From 60% (VLWIR) up to 80% (MWIR)	
PRNU	■ < 3%	
Dark Current @200K	■ < 10 fA/µm ² (LWIR array) & < 2500 fA/µm ² (VLWIR array)	
MTF @Nyquist	■ > 0.6	
Non linearity	■ < 1% p-p from 5 to 90% of CHC	
ReadOut Noise @200K	■ From 230e- (Gain 1) up to 660 e- (Gain 7)	
Operability	■ 100%	
Power Dissipation	■ 100mW @ 3 MHz for 9 activated readout line ■ + 8 mW/additional activated readout line	
Radiation hardness	■ Maximum TID: up to 20 krad(Si) ■ Maximum TNID: up to 6e10 protons/cm ² @ 60MeV ■ SEE robustness: SEL free / Low SEU & SEFI rate	

Single module

Multi module
(Design compatible with Butted and staggered configuration)

DETECTOR CONFIGURATIONS *		
Passive configuration (without cryocooler)		
Active configuration (with cryocooler)		

*Detailed technical information available on request

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