

LYNRED Linear CAPYORK

(1200x12) x4 – 15 μ m pitch – MCT - SWIR to MWIR

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

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

LINEAR INFRARED DETECTOR FOR **SPACE IMAGING** APPLICATIONS



**MULTISPECTRAL AND MULTI LINEAR
ARRAY INFRARED DETECTOR**



**TAILORED ARCHITECTURE FOR
PUSHBROOM AND WHISKBROOM
INSTRUMENTS**



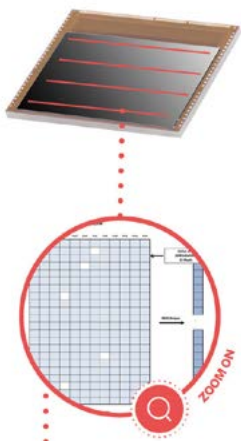
**VERSATILE AVAILABLE
CONFIGURATIONS**



**FROM 1,200 PIXELS UP TO >4,500
PIXELS PER LINE**

SPACE





1200 x 12
(ON-CHIP TDI)



**VERSATILE
ARCHITECTURE**



**100%
OPERABILITY**



**SPACE PROVEN
ARCHITECTURE**



**ON BOARD
LSTM MISSION**



	Nominal configuration	On demand
ARRAY FEATURES		
Sensitive array	■ 4 channels [0.8 – 2.5µm]	■ Extension available from SWIR (0.8µm) to MWIR (5µm)
Format & Pixel pitch	■ 4 readout lines of 1200x12 TDI pixels ■ 15 µm pixel pitch	■ 1 to 4 readout lines (1 readout line per channel)
Operating temperature	■ 200K	■ [90K – 200K]

ROIC (READ-OUT INTEGRATED CIRCUIT)		
ROIC architecture	<ul style="list-style-type: none"> ■ Snapshot integration type (IWR & ITR mode) ■ TDI on-chip (12 stages) ■ 1 analog output per readout line (Pseudo-differential mode, 2.1V maximum output voltage swing) 	
ROIC main functionalities	<ul style="list-style-type: none"> ■ Photodiode deselection (1 among 12 for each column) ■ Bi-directional TDI ■ Integration time adjustment per readout line ■ Gain selection (1 among 3) per readout line ■ Line selection to be readout (1 to 4 among 4) ■ Non readout line deactivation for power saving ■ Anti-blooming 	
Operating characteristics	<ul style="list-style-type: none"> ■ Nominal Frame rate: 4 kHz @5.5MHz pixel rate (Available operation up to 8MHz pixel rate) ■ Integration time: From 15 µs up to (Frame time – 15µs) 	
Charge Handling Capacity	■ 3 values available: 147, 220, 351 ke-	

TYPICAL PERFORMANCES (NOMINAL CONFIGURATION)	
Detection efficiency	■ 85%
PRNU	■ < 4%
Dark Current @200K	■ < 1.2 fA/µm ²
MTF @Nyquist	■ > 0.45
Non linearity	■ < 1% p-p from 5 to 90% of CHC
ReadOut Noise @200K	■ (Gain 1: 29e-, Gain 2: 37e-, Gain 3: 52e-)
Operability	■ 100%
Power Dissipation	<ul style="list-style-type: none"> ■ 250mW @5.5 MHz for 4 activated readout line ■ -55 mW/deactivated readout line
Radiation hardness	<ul style="list-style-type: none"> ■ TID: up to 20 krad(Si) ■ TNID: up to 6E10 protons/cm² @ 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 high reliability cryocooler >60,000h)		

In collaboration with Absolut System

*Detailed technical information available on request

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