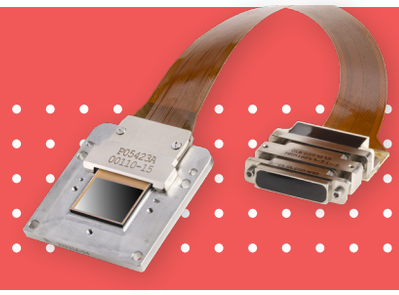
LYNRED



LYNRED Linear

CAPYORK

(1200x12) x4 – 15 µm 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.

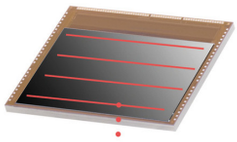
Based on LYNRED space proven MCT technology, LYNRED Linear CAPYORK detector, developed in the frame of LSTM mission offers the **highest level in terms of performance** (100% operability, high frame rate, on-chip TDI…) and **versatility** (compatible design with staggered/ butted configuration, gain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

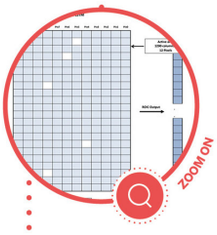
LINEAR INFRARED DETECTOR FOR SPACE IMAGING APPLICATIONS

- **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

PRODUCT NUMBER: **LYNRED LINEAR CAPYORK**





1200 x 12
(ON-CHIP TDI)

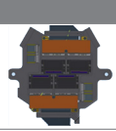
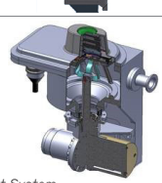
VERSATILE ARCHITECTURE

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	■ *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	■ *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	■ *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/µm²*	
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	■ *250mW @5.5 MHz for 4 activated readout line* ■ *-55 mW/deactivated readout line*	
Radiation hardness	■ *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 crycooler >60,000h)		

In collaboration with Absolut System

*Detailed technical information available on request

LYNRED

LYNRED HEADQUARTERS
Avenue de la Vauve - CS 20018
91127 Palaiseau - France
Phone +33 (0)1 60 92 18 30
info@lynred.com

DEVELOPMENT AND PRODUCTION CENTER
Actipole - CS 10021 - 364, route de Valence
38113 Veurey-Voroize - France
Phone +33 (0)4 76 28 77 00
info@lynred.com