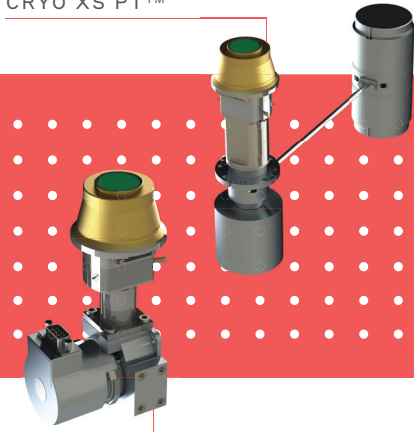




LYNRED®

See Beyond Horizons

CRYO XS PT™



CRYO XS R™



STARING ARRAY INFRARED DETECTOR

## LYNRED Staring Array

# COBRA™

1380x640 - 20µm pitch – MCT - SWIR

COBRA™ is a **high spectral and spatial resolution staring array detector** well-suited for integration in various space-based Earth observation applications like **atmosphere chemistry or hyperspectral imaging**.

Based on LYNRED space proven MCT technology, large format COBRA detector offers the **highest level of performances** (high operability, high frame rate, low readout noise...) and **versatility** to fit with numerous needs (format selection, adjustable gain, CDS/multi-reading...).

## STARING ARRAY INFRARED DETECTOR FOR SPACE IMAGING AND SOUNDING APPLICATIONS



**HIGH SPECTRAL AND SPATIAL RESOLUTION**



**ADAPTABLE AND VERSATILE CONFIGURATIONS**



**EMBEDDED SPACE PROVEN TECHNOLOGIES**

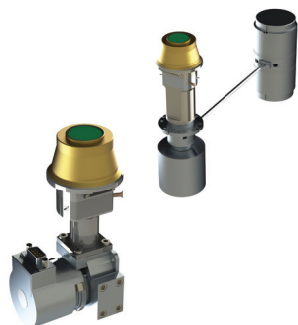


**WELL ADAPTED FOR HYPERSPPECTRAL AND SPECTROSCOPY IMAGING**



PRODUCT NUMBER: LYNRED STARING ARRAY COBRA™

# ●● STARING ARRAY INFRARED DETECTOR FOR SPACE IMAGING AND SOUNDING APPLICATIONS ●●



## MULTI-PURPOSE



## ADVANCED PERFORMANCES



## MULTI-APPLICATION






## VERSATILE CONFIGURATION



## SPACE PROVEN ARCHITECTURE



ARRAY FEATURES	Nominal configuration	On demand	
Spectral range	■ 0.9 – 2.5µm	■ Spectral adjustment in the MW range	
Array format & Pixel pitch	■ 1380 x 640, 20µm pitch		
FPA operating temperature	■ 150 K	■ [90K,200K]	
ROIC (READ-OUT INTEGRATED CIRCUIT)			
ROIC architecture	<ul style="list-style-type: none"> <li>■ CTIA input stage</li> <li>■ Snapshot integration type</li> <li>■ Readout: IWR/ITR/non-destructive multi-reading</li> <li>■ On-chip CDS in high gain mode</li> <li>■ Analog outputs: 6 or 12 outputs (selectable)</li> </ul>		
ROIC main functionalities	<ul style="list-style-type: none"> <li>■ Gain selection (by line)</li> <li>■ Line selection to be readout</li> <li>■ Anti-blooming</li> <li>■ Power management</li> </ul>		
Operating characteristics	<ul style="list-style-type: none"> <li>■ Maximum full frame rate (IWR): 130Hz</li> <li>■ Frame rate depending on windowing (examples): 645 Hz (128 rows), 325Hz (256 rows)</li> <li>■ Integration time: adjustable in the frame</li> </ul>		
Charge Handling Capacity	■ 142ke- or 1.3Me-		
TYPICAL PERFORMANCES (NOMINAL CONFIGURATION)			
Quantum Efficiency	■ 80%		
PRNU	■ < 3%		
Dark Current	<ul style="list-style-type: none"> <li>■ 2 10<sup>-3</sup> fA/µm<sup>2</sup> @ 150K</li> <li>■ 5 10<sup>-1</sup> fA/µm<sup>2</sup> @ 190K</li> </ul>		
MTF @Nyquist	■ 0.5		
Non linearity	■ < 1 % p-p from 5 to 95 % of FWC		
ReadOut Noise @150 K	<ul style="list-style-type: none"> <li>■ High gain: 100e-, 45e- with CDS</li> <li>■ Low gain: 340e-</li> </ul>		
Operability	■ > 99.5 %		
Power Dissipation	■ < 220 mW @130Hz (full frame)		
Radiation hardness	<ul style="list-style-type: none"> <li>■ TID: up to 20 krad(Si)</li> <li>■ TNID: up to 6e10 protons/cm<sup>2</sup> @60MeV</li> <li>■ SEE robustness: SEL free / Low SEU &amp; SEFI rate</li> </ul>		
PACKAGING™	PASSIVE™ (NO CRYOCOOLER)	CRYO-XS R™	CRYO-XS PT™
			
Dimensions	<ul style="list-style-type: none"> <li>■ IRFPA: 30.3 x 16.7mm<sup>2</sup></li> <li>■ Baseplate adjustments on demand</li> </ul>	■ 85 x 64 x 152 mm <sup>3</sup>	<ul style="list-style-type: none"> <li>■ Dewar : 60 x 60 x 220 mm<sup>3</sup></li> <li>■ Cooler : 60 x 60 x 122 mm<sup>3</sup></li> </ul>
Operating temperature	■ [90K,200K]	■ [-40°C,71°C]	■ [-40°C,71°C]
Cooler	■ NA	■ Rotary cryocooler Thales Cryo RM3 or Ricor K508	■ Pulse Tube cryocooler Thales Cryo LPT9511
Product power consumption	■ 220mW @130Hz (full frame)	■ Steady State : < 4.5Wdc @ 22°C	■ Steady State : < 15Wdc @ 22°C
Power supply range	■ 3.3V to 4.3V	■ 24V	■ 24V

### LYNRED HEADQUARTERS DEVELOPMENT & PRODUCTION CENTER

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