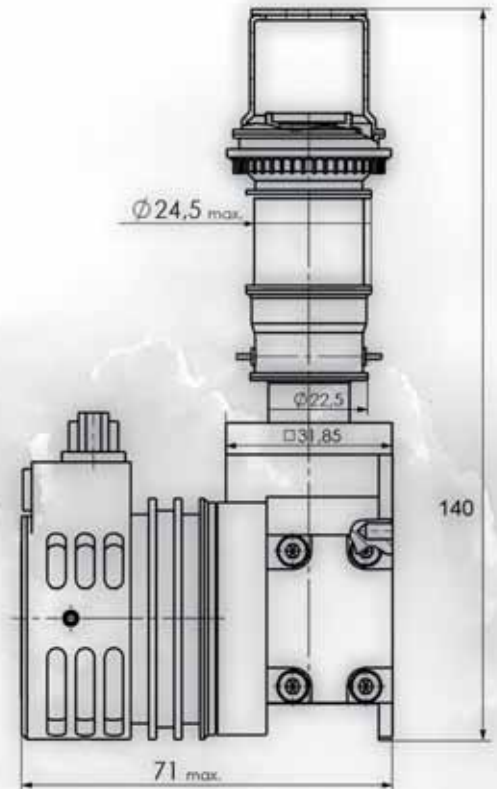


VIPER^{MOD} - MCT 640 x 512 15 μ m PITCH IDCA

COMPACT HIGH RESOLUTION INTEGRATED DETECTOR COOLER ASSEMBLY



Reducing the pixel pitch to 15 μ m provides full TV resolution in MWIR and LWIR with reduced size, weight, power consumption and cost.

Specifically the LWIR modules define a new standard for state of the art thermal imagers in land, sea or airborne platforms.

The modules can be equipped with AIM's long life split linear compressor if cooler lifetime is more important than power consumption.

The digital output of the engine is optionally available including NUC functionality.



VIPER^{MOD} - MCT 640 x 512 15 μm PITCH IDCA

IR-Sensor	MW	LW
Material	HgCdTe - Cadmium Mercury Telluride	
Format	640 x 512	
Pixel pitch	15μm x 15μm	
Material spectral response	0.8-5.2μm typ.	0.8-9.0μm typ.
Detector spectral response	3.4-5.2μm standard	7.6-9.0μm
FPA operating temperature	90K typ.	67K typ.

ROIC

Technology	Si - CMOS
Input	Direct charge injection
Operating mode	Snapshot
Read out modes	selectable IWR/ITR
Subarrays / Windows	Any size in steps of 4 horizontal and 1 vertical
Charge handling capacity	IWR: 5 x 10 ⁶ e ⁻ ITR: 6 x 10 ⁶ e ⁻
Dynamic range	> 80dB
Read out noise	< 400 e ⁻
Outputs	2 (4 optional)
Max. output pixel rate	10MHz / output
Max. full frame rate	50Hz (100Hz with 4 outputs)

IWR = Integrate While Read, ITR = Integrate Then Read

Dewar / Cooler

Type	Integrated Detector Cooler Module (IDCA)	
Cold shield	F / 4.6	F / 2.05
Cooler	Integral Rotary (other coolers optionally available*)	
Cool down time	< 6min	< 7min
Lifetime	> 8,000h	> 6,000h

(*) > 15,000h with Split Linear Cooler

Command / Control Electronics

Function / Interface ROIC	DC supply / Clocks / Serial data / 2 (4) analog video
AD Converter / DMUX	2 x 14 bit (4 x 14 bit)
Output	14 bit serial / Frame Sync / Line Sync / Data Clock
Input	Ext. Frame in / RS232 serial data / 5V Power supply

Performance

NETD (300K half well)	20mK (F / 4.6, t _{int} ~ 5ms)	35mK (F / 2, t _{int} ~ 0.25ms)
IETD	< 0.8 x NETD typ.	< 1.0 x NETD typ.
Array operability	> 99.5%	> 99.0%

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