TENUM®640 Uncooled Thermal Cores

TENμm®

UNRIVALED. UNCOMPROMISED. A NEW FRONTIER IN INFRARED TECHNOLOGY.

With unrivaled design and unwavering performance, Tenum®640 precisely balances ultra-small pixel structure with ultra-sensitive microbolometer performance at a remarkable cost advantage. The 10-micron pixel pitch Vanadium Oxide (VOx) technology behind Leonardo DRS' Tenum®640 is the most advanced uncooled infrared sensor design available to Original Equipment Manufacturers (OEMs) today.

This revolutionary detector design enables greater affordability while delivering an uncompromised thermal imaging performance. The high-resolution 640 x 512 array size offers superior long-wave infrared (LWIR) detection at 60 fps and the incredible sensitivity (less than 50 mK NETd) is ideal for a variety of OEM applications.

TENμm®640

LEONARDO DRS

TENUM®640

FOCAL PLANE ARRAY

COMPONENT	DESCRIPTION
Detector Type	Uncooled VOx Microbolometer
Array Size	640 x 512 (ICE™, 14-bit)
Pixel Pitch	10 µm
Spectral Band	8-14 µm
Sensitivity (NETd) @ f/1.0 @ Room Temperature	<50 mK

VIDEO FORMAT

Frame Rates	60 fps / 9 fps
Analog Video	NTSC (480i); NTSC PAL, Black and White or Color
Digital Video	14-bit / 8-bit LVCMOS or Camera Link®
Digital Zoom and Pan	Region of Interest, E-zoom from 1X - 4X
Non-Uniformity Correction	1-point with shutter or through lens
Time to First Image	< 3.0 seconds

POWER

Input Voltage	3 - 5.5 V Base Configuration 4.5 - 18 V BC with Feature Board
Power Dissipation (nominal)	< 1.2 W Base Configuration < 1.4 W BC with Feature Board
PoUSB (Power over USB)	Requires Feature Board

ENVIRONMENTAL

COMPONENT	DESCRIPTION
Operating Temp Range	-40°C to +70°C (-40°F to +158°F)
Shock / Vibration	75 G (all axis) / 4.43 grms (three axis)
EMC Radiation	FCC Class A digital device
Humidity	5 to 95%, non-condensing
Standards Compliance	ROHS and WEEE Compliant
Sealed lens / Lens mount	IP 67

STANDARD FEATURES

Available Command Protocols	LVCMOS UART; RS-232; USB 2.0
Image Enhancement	Image Contrast Enhancement (ICE™) with gain and level bias controls
External Sync	Yes
Color	24-bit RGB and YUV (4,2,2) Superframe
Tenum™ Toolbox	Design environment for custom symbology and interface development
3-D Noise Filter	User option to enable < 30 mK NETd
Custom Lens Calibration (Optional)	Memory storage with one custom lens: • 5 custom lenses or • 5 operating temperatures

CONFIGURATIONS

Base Configuration	Detector, Bias Board, Processor Board
With Feature Board	Base configuration with Feature Board

LENS CONFIGURATIONS

EFFECTIVE FOCAL LENGTH (EFL)	FIELD OF VIEW (FOV) (H° X V°)	F/#	WEIGHT (IN GRAMS)	DIMENSIONS ** (H X W X D) (±0.5) IN MM
No Lens	No Lens	N/A	29	31.3 x 28.8 x 27.2
7.7 mm	49° x 40°	1.3	39	31.3 x 28.8 x 34.2
15 mm	25° x 20°	1.2	45	31.3 x 28.8 x 41.0
20mm	18° x 15°	1.2	48	31.3 x 28.8 x 43.2

** Without Feature Board

Camera Link® is a registered trademark of AIA.

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