

TENUM™₆₄₀
UNCOOLED THERMAL
CORES



10-MICRON PIXEL PITCH. UNRIVALED. UNCOMPROMISED. A NEW FRONTIER IN INFRARED TECHNOLOGY.

TENUM™₆₄₀ OEM THERMAL CAMERA CORES

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

TEN μ m™ 640

FOCAL PLANE ARRAY

COMPONENT	DESCRIPTION
Detector Type	Uncooled VOx Microbolometer
Array Size	640 x 512 (ICE™, 14-bit)
Pixel Pitch	10 μ m
Spectral Band	8-14 μ m
Sensitivity (NE Δ T) @ 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*
Automatic Gain and Level	User defined and persistent through power cycles
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 (BC) 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

LENS CONFIGURATIONS

EFFECTIVE FOCAL LENGTH (EFL)	FIELD OF VIEW (FOV) (H° X V°)	F/#	WEIGHT (IN GRAMS)	DIMENSIONS ** (H X W X D) (\pm 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.

ENVIRONMENTAL

COMPONENT	DESCRIPTION
Operating Temp Range	-40°C to +80°C (-40°F to +176°F)
Shock / Vibration	75 G (all axis) / 4.43 g _{rms} (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

CONFIGURATIONS

Base Configuration (BC)	Detector, Bias Board, Processor Board
With Feature Board (FB)	Base configuration with Feature Board

STANDARD FEATURES

Available Command Protocols	LVCMOS UART; RS-232; USB 2.0
Image Enhancement	Image Contrast Enhancement (ICE™)
External Sync	Yes
Color	24-bit RGB and YUV (4,2,2)
Tenum™ Toolbox	Design environment for custom symbology and interface development
3-D Noise Filter	User option to enable < 30 mK NETD

Specifications subject to change without notice.
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