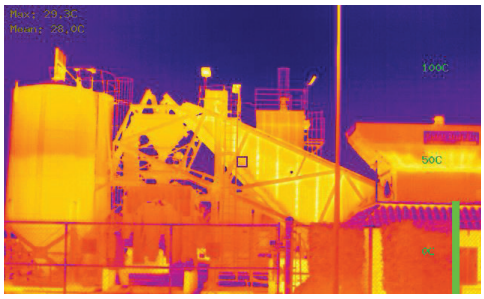
TELEDYNE FLIR

High Performance, Dual Thermal and Visible OEM Camera Module

HADRON™ 640R

Hadron 640R pairs a performance-leading 640x512 resolution radiometric Boson® thermal camera with a 64MP visible camera in a single easy-to-integrate module. With a size, weight, and power (SWaP) optimized design, it is an ideal dual sensor payload for integration into unmanned aircraft systems (UAS), unmanned ground vehicles (UGV), robotic platforms, and AI-ready applications where battery life and run time are mission critical. The Boson longwave infrared (LWIR) thermal camera provides the ability to see through total darkness, smoke, most fog, glare as well as take the temperature of every pixel in the scene. The 64MP visible camera imagery enables AI and machine learning for intelligent sensing applications. With drivers available for market leading processors from NVIDIA, Qualcomm, and more plus industry-leading integration support, Hadron 640R reduces development cost and shortens time to market.



INDUSTRY-LEADING THERMAL AND VISIBLE CAMERA PERFORMANCE

Collect high-speed, dual VGA radiometric thermal and HD visible imagery in all light conditions.

- 64MP visible camera resolution
- Compact, radiometric, 640x512-resolution Boson provides temperature of every pixel
- Flexible dual 60 Hz video output via USB or MIPI

BUILT FOR INTEGRATORS

Reduce development cost and time to market with a solution from a single, reliable supplier.

- Dual use and classified under US Department of Commerce jurisdiction as ECCN 6A003.b.4.b.
- Drivers and sample code available for NVIDIA Jetson Nano, Qualcomm RB5, and more
- Highly qualified, technical services team available to support integration

SIZE, WEIGHT, AND POWER OPTIMIZED DESIGN

Optimize design and operation time with compact, lightweight, and low-power module.

- Low, steady state power consumption at 1.8W
- IP54-rated dust and water protection
- Lightweight 56g enables longer flight time and extends battery life

For More Information Visit:
www.flir.com/hadron640R

www.teledyneflir.com

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SPECIFICATIONS

Imaging & Optical	
Thermal Imaging Detector	Boson 640 x 512 pixels, 12 µm pitch, USB 3.0, 2-lane MIPI
EO Camera Optics	EFL 4.8mm, 67° HFOV, F/# 1/2.3
EO Camera Sensor	9248 x 6944 pixels (64.2 MP), 0.7 µm pitch, 4-lane MIPI
EO Camera Video	Full resolution @ 60Hz
Aspect Ratio, Visible	4 to 3
IMU	ICM20602, I2C or SPI (selectable)
IR Camera Optics	EFL 13.6mm, 32° HFOV, F/# 1.0
IR Camera Video	Full resolution @ 60Hz
Aspect Ratio, Thermal	5 to 4
Radiometry	
Temperature Accuracy	±5°C or less, over 0^0C to 100^0C range.
Electrical	
Electrical Interface	Hirose DF40C-50DP-0.4V(51) Example of mating connector: DF40HC(2.5)-50DS-0.4V(51)
Power	5V supply voltage. Typical power dissipation < 1800mW, Max < 2900mW
Mechanical	
Mechanical Interface	Screw mount to back plate
Size [w_o lens]	35 x 49 x 45 mm (1.38" x 1.93" x 1.77")
Weight	56 g
Environment & Approvals	
Environmental Sealing	IP54 (with the rear interfaces sealed)
Operational & Storage Temperature	-20°C to +60°C
Tested EMI Performance	FCC part 15 Class B
Software	
Software Drivers*	NVIDIA Jetson Nano Qualcomm Snapdragon rb5 Qualcomm Snapdragon 865 **Contact Teledyne FLIR for latest software drivers*

Specifications are subject to change without notice.
For the most up-to-date specs, go to www.flir.com/hadron640R

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