

# MS1650B

Cost-Effective  
LWIR QQVGA Sensor

## Key Features

160x120 FPA size

50 $\mu$ m detector pitch

Wafer-level vacuum packaged

Easy-to-use 3-wire SPI  
programming interface

Ultra low-cost uncooled  
microbolometer technology

Patent granted



## Technical Specifications

## MS1650B

Detector Technology	Microbolometer
Wavelength	7.5 $\mu$ m – 13.5 $\mu$ m (LWIR)
FPA Size	160 x 120 (QQVGA)
Detector Pitch	50 $\mu$ m
NETD	< 300 mK with F/1 optics
Electrical Power Dissipation	30 mW, 5.0V power supply
Frame Rate	Up to 30 fps, programmable
Readout Mode	Rolling line
Readout Gain	Programmable
Video Output	Single analog output, 3.0V swing, optional reference
Sensor Programming Interface	3-wire SPI, 3.3V swing digital I/O
Video Synchronization	Master mode with self trigger, slave mode with external sync signal
Physical Dimensions	6" CMOS wafers, 14.5mm x 11.5mm die dimensions
Availability	Tested dies and wafers are available as engineering samples
Engineering Characterization Platform	Testing platform (electronics, firmware, software, and SDK) is available