



Robin 12 μ m VGA LWIR Family

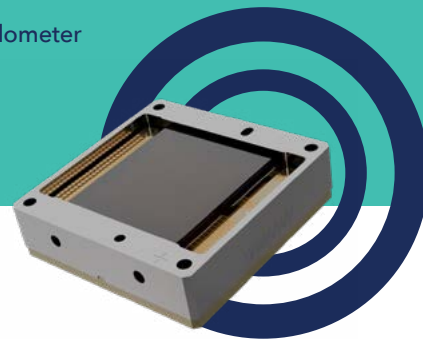
Detector | Video Engine | Open-Frame Camera

Performance Leadership. Optimized SWaP. Engineered for Scale.

Robin

12 μ m VGA detector

640 x 512, 12 μ m pitch, VOx Microbolometer
Detector with Front End (FE)
Wafer Level Packaging, TEC-less



Engineered for Ultimate Design Flexibility and Uncompromised Image Quality

General Description

The Robin Detector, SCD advanced 12 μ m VOx microbolometer is the heart of the Robin Family of microbolometers. The VGA detector provides the highest flexibility for advanced LWIR applications, requiring uncompromising imagery at high frame per second, ruggedness and boresight accuracy.

With its exceptional image quality, remarkably low Noise Equivalent Temperature Difference (NETD), very low time thermal constant (Tau), rapid image acquisition, and minimal weight, SCD Microbolometer ranks among the leading LWIR detectors in the market.

Built For

- Missile Seekers
- Loitering Munitions
- Guided Munitions
- Armored vehicle solutions - Situational Awareness, Drive Vision Enhancement (DVE)
- Missile Warning System (MWS)
- UAV and Miniature Payload
- Low Cost Handheld Systems
- Thermal Weapon Station (TWS)
- Security and Short-mid Range Surveillance

It is suitable for applications looking for full design flexibility, integrating the detector into complex, demanding environments.

Dual video streams, one for vision and additional, industry highest FPS, video stream for demanding computer vision applications, provide flexibility of designs. Unique Region of Interest adjustment allows for extremely accurate detector boresight calibration.

This product continues SCD long heritage uncooled detectors technology, along with our 25 μ m and 17 μ m pitch families, fielded and combat- proven for more than 20 years.

Why Robin?

Performance Without Compromise:

- Excellent FOM (Figure of Merit): - Low thermal time constant (TAU) < 7msec - NETD (60Hz) < 50mK
- High frame rate up to 120Hz
- Ruggedized design for harsh environments
- Accurate mechanical and digital boresight

SWaP Optimized for Modern Defense Platforms:

- Low power < 550mW
- Small form factor - 21x21 mm³
- TEC-less Wafer Level Package (WLP)
- Integrated power supplies and control for simplified integration



Typical Performance

Parameter	Value
Technology	VOx Microbolometer
Format	640 x 512
Pitch	12 μ m
Temporal NETD@25C, F#1, 60Hz, 7.5 - 14 μ m	< 50mK
Thermal Time Constant (Tau)	< 7 msec
Operability	> 99.5%
Frame Rate	25, 30, 50, 60, 120 Hz
Video Output	Digital, 14bit LVCMOS
Communication	SPI, QSPI
Power Dissipation (@60Hz, 25C)	\leq 550 mW
Package	Wafer Level Package (WLP)
Size	21x21X9.5 mm ³
Weight	<10g
Operation Temperature	-40°C to +85 °C
Storage Temperature	-40°C to +85°C
Vibrations	14 grms 10-2000Hz, for each axis
Shock	1500G @ 0.4msec, 500 shocks per axis
MTTF	20 years @25°C
FPA Temperature Stabilization	TEC-less

Technical characteristics described in this data sheet are for information only. They are not contractual and may change without prior notice.

Micro Robin

12 μ m VGA Video Engine & Open Frame Camera



A Sweet Spot of Design Ease, Performance and Cost Optimization

General Description

The Micro Robin, SCD advanced 12 μ m VOx Microbolometer video engine or Open frame camera, stands out as the ideal choice for VGA LWIR systems, looking for a solution at an optimal integration point. With its exceptional image quality, low Noise Equivalent Temperature Difference (NETD), and low time thermal constant (Tau), rapid image acquisition, and minimal weight, SCD's Microbolometer ranks among the leading LWIR sensors in the market.

The Micro Robin provides optimal NUC + BPR corrected video, optimized for computer vision and is specifically tailored to meet challenges associated with Size, Weight, Power (SWaP) constraints and highly dynamic applications.

Built For

- UAV and Miniature Payloads
- Loitering Munitions
- Guided Munitions
- Armored vehicle solutions - Situational Awareness, Drive Vision Enhancement (DVE)
- Missile Warning System (MWS)
- Affordable Handheld Systems
- Thermal Weapon Station (TWS)
- Missile Seeker
- Security and Short-mid Range Surveillance

Combined with mission fitted lens, it provides a quick turnaround design with minimum concerns for the application team.

The combination of ruggedness, SwaP and simplicity of implementation, make the Micro Robin an ideal choice for a wide range of applications, and in particular high-volume solutions.

This product continues SCD long heritage uncooled detectors technology, along with our 25 μ m and 17 μ m pitch families, fielded and combat- proven for more than 20 years.

Why Micro Robin?

Performance Without Compromise:

- Excellent FOM (figure of merit): - Low thermal time constant (TAU) < 7msec - NETD (60Hz) < 50mK
- High frame rate up to 60Hz
- Optimized NUC+BPR,
- Shutterless operation

SWaP Optimized for Modern Defense Platforms:

- Small form factor - 21x21x17 mm³
- Low power < 1W
- Low weight < 17g
- Number of FoV options for Integrated lens



Typical Performance

Parameter	Value
Technology	VOx Microbolometer
Format	640 x 512
Pitch	12 μ m
Temporal NETD@25C, F#1, 60Hz, 7.5 - 14 μ m	< 50mK
Thermal Time Constant (Tau)	< 7 msec
Operability	> 99.5%
Frame Rate	25, 30, 50, 60 Hz
Video Output	Digital, 14bit LVCMOS, MIPI (NUC, BPR)
Communication	UART
Input Voltage	3.3V-5V
Power Dissipation LVCMOS (@60Hz, 25C)	\leq 1W
Size w/o Lens	21x21x17 mm ³
Size w/ Lens	Depends on lens
Weight (Engine only)	\leq 17g
Optional Lens	Variety of lenses for narrow and wide FOV
Integrated Shutter	NA
Optional Interface Cards	USB-3
Operation Temperature	-40°C to +71°C
Storage Temperature	-40°C to +85°C
Vibrations	14 grms 10-2000Hz, for each axis
Shock	1500G @ 0.4msec, 500 shocks per axis

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Core Robin

12 μ m VGA Video Engine & Open Frame Camera



The Complete OEM Thermal Core Camera

General Description

The Core Robin, SCD advanced 12 μ m VOx Microbolometer OEM open frame camera stands out as the perfect choice for applications looking for a fully integrated, calibrated VGA LWIR camera. With its exceptional image quality, remarkably low Noise Equivalent Temperature Difference (NETD), very low time thermal constant (Tau), rapid image acquisition, and minimal weight, SCD's Microbolometer ranks among the leading LWIR Open frame cameras in the market.

Providing uncompromising quality, high mission flexibility of implementations, including dual video streams, one for vision and additional, industry highest FPS, video stream for demanding computer vision applications.

Built For

- Armored vehicle solutions - Situational Awareness, Drive Vision Enhancement (DVE)
- Missile Warning System (MWS)
- UAV and Miniature Payload
- Loitering Munition
- Guided Munition
- Low Cost Handheld Systems
- Thermal Weapon Station (TWS)
- Missile Seeker
- Security and Short-mid Range Surveillance

Supporting shutter and shutterless operation, and multiple video formats, The Core Robin is suitable for a wide range of applications, specifically tailored to meet challenges associated with Size, Weight, Power (SWaP) constraints and highly dynamic applications.

The OFC version, fitted with mission ready lens, with its ruggedized design, provides the quickest implementation solution for defense and mission critical applications.

This product continues SCD long heritage uncooled detectors technology, along with our 25 μ m and 17 μ m pitch families, fielded and combat- proven for more than 20 years.

Why Core Robin?

Performance Without Compromise:

- Excellent FOM (figure of merit): - Low thermal time constant (TAU) < 7msec - NETD (60Hz) <35mK
- High frame rate up to 120Hz
- Dual streams, up to 120Hz and 60Hz resp - Fully processed, up to 60 Hz video stream - Separate 120 Hz NUC+BPR stream

SWaP Optimized for Modern Defense Platforms:

- Integrated shutter option
- Small form factor - 23x23x25 mm³
- Low power < 1.2 W
- Low weight <23g
- Number of FoV options for Integrated lens

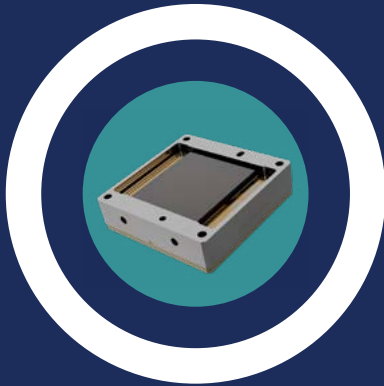


Typical Performance

Parameter	Value
Technology	VOx Microbolometer
Format	640 x 512
Pitch	12 μ m
Temporal NETD@25C, F#1, 60Hz, 7.5 - 14 μ m	< 35mK (with De-noise)
Thermal Time Constant (Tau)	< 7 msec
Frame Rate	25/30Hz, 50/60 Hz, 100/120Hz
Video Output	Digital, 14bit LVCMOS, MIPI in 2 Simultaneous Video Streams: <ul style="list-style-type: none">• Full Processing up to 60Hz (NUC, BPR, RCC, NR, DRC, Zoom, Qfactor, PC, and more• NUC, BPR up to 120Hz
Communication	UART
Input Voltage	3.3V-5V
Power Dissipation (@60Hz, 25C)	\leq 1.2W
Size w/o Lens	23x23x25 mm ³
Size w/ Lens	Depends on lens
Weight (Engine)	\leq 23g
Potential Lens	Variety of lenses for narrow and wide FOV
Integrated Shutter	Optional
Optional Interface Cards	USB-3, CameraLink, analog output
Operation Temperature	-40°C to +71°C
Storage Temperature	-40°C to +85°C
Vibrations	14 grms 10-2000Hz, for each axis
Shock	1500G @ 0.4msec, 500 shocks per axis

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Robin 12 μ m VGA LWIR Family



Robin

Mission Ready
Ruggedized Detector



Micro Robin

Optimal Performance
and Cost



Core Robin

A Complete OEM
Thermal Core

