

Micro Core™

**THE SMALLEST AND LIGHTEST
SHUTTERLESS THERMAL CAMERA
ON THE MARKET TODAY**

KEY CAMERA SPECS

- 200 x 150 Sensor Resolution
- 61° and 81° Field of View Options
- 20C to 300C (-4F to 572F) Detection
- Size (LxWxH) <8 x 11 x 9mm
- Shutterless Design
- Dual-Gain Smart Pixels
- < 9Hz Frame Rate

Seek™
thermal

thermal.com



Micro Core is a high-performance thermal sensor in a market-leading size footprint. Designed for small form factor, low power and lightweight applications, the Micro Core delivers high-end thermal capabilities, accuracy and performance that is unmatched in its price range.

Designed and Manufactured in Santa Barbara, California with Global Components.

KEY FEATURES

Shutterless Design for Uninterrupted Imaging

Automatic shutterless correction increases reliability by eliminating a moving mechanical part and delivers uninterrupted thermal imaging

200 x 150 Thermal Sensor Resolution

30,000 temperature pixels for excellent image clarity and sensitivity

12 Micron Pixels

More resolution and temperature data packed into a physically tiny array enables small form factor applications and lower cost

Small Size. Big Performance.

Unmatched combination of performance, size, and price

Easy To Use Development Tools

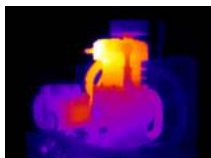
Get access to SDKs, APIs, support documentation and other important tools to ensure your project is a success

Dual-Gain Smart Pixels

Each pixel automatically adjusts gain states to maximize resolution contrast when viewing hot and cold objects in the same scene



Ruggedized Devices



Monitoring



Firefighting



Test & Measurement



Drones



Automotive

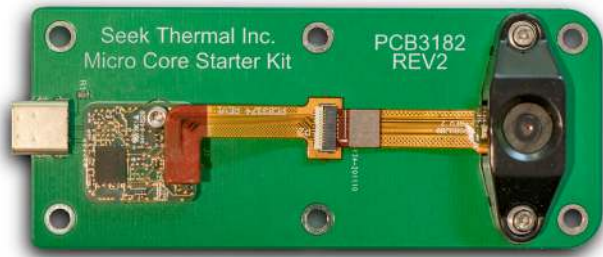
TECHNICAL SUMMARY

200 x 150 RESOLUTION

| Specifications | | Description | |
|--------------------------------------|--|------------------------------------|--|
| Microbolometer | Uncooled Vanadium Oxide | | |
| Pixel Pitch | 12 Microns | | |
| Spectral Response | 7.8 - 14 Microns | | |
| Sensor Resolution (Array Format) | 200 (h) x 150 (v); 30,000 pixels | | |
| Frame Rate | < 9Hz | | |
| Scene Dynamic Range ¹ | -20°C to 300°C | | |
| Measurement Range ¹ | 0°C to 300°C | | |
| Sensor Sensitivity | 75mK (typical), <100 mK (max) @ 25°C with f/1.1 | | |
| Non-Uniformity Correction (NUC) | Automatic shutterless NUC (with scene motion) | | |
| Video Output Interfaces ² | USB (with separate processor board) | | |
| Supply Voltage | 3.3V to 5.0V | | |
| Power: Core Only | <50mW @ 25°C | | |
| Power: Core + Interface Board | <300mW @ 25°C | | |
| Output Formats (user selectable) | Linux / Windows SDK | | |
| Partially Processed | 16-bit corrected data and pre-AGC filtered | | |
| Color Data | 32bit float & 16-bit and 8-bit Grayscale Data | | |
| Thermography | 32-bit floating point or 16-bit fixed point | | |
| Optics | | | |
| Focal Length | 1.8mm | 2.3mm | |
| F-number (focal length/aperture) | f/1.10 | f/1.05 | |
| Spatial Resolution (IFOV, center) | 6.67 | 5.23 | |
| HFOV | 81° | 61° | |
| VFOV | 59° | 45° | |
| Detection Range ³ | 145m | 186m | |
| Recognition Range ³ | 36m | 46m | |
| Identification Range ³ | 21m | 27m | |
| Distance to Spot Ratio | 25:1 | 32:1 | |
| Focus | Fixed | Fixed | |
| Depth of Field | 10 cm to infinity | 10 cm to infinity | |
| Lens Material | Chalcogenide | Chalcogenide | |
| Mechanical | | | |
| Focal Length | 1.8mm | 2.3mm | |
| Core Dimensions (L x W x H) | 7.3 x 11 x 9mm core only plus flex | 7.9 x 11 x 9mm core only plus flex | |
| Core Weight | 1.9 grams | 2.0 grams | |
| Thermography | | | |
| Temperature Calibration | Calibrated Output in °C, °F, K | | |
| Thermography Accuracy ^{1,4} | The greater of ±5°C or 5% between 0°C to 300°C scene temperature | | |
| Environmental | | | |
| Operating Temperature Range | 0°C to 65°C | | |
| Storage Temperature Range | -40°C to 105°C | | |
| Solar Protection | Yes | | |
| Humidity | 10%~95%RH, non-condensing | | |
| Ingress Protection | IP50 | | |
| Regulatory | ROHS, WEEE, REACH | | |
| Documentation and Tools | | | |
| Starter Kits | Available | | |
| Data Sheet | Available | | |

1. Specified at nominal 25°C ambient operating temperature and nominal measurement distance of 12 inches. Temperature reported is Center Spot temperature, which is an average of the center 36 pixels. Contact Seek Thermal for performance at other nominal operating temperatures.
2. SPI option available. Contact Seek Thermal for further details.
3. Based on Johnson Criteria and 2m target size.
4. Factory default emissivity is set to 0.97. Emissivity is adjustable using the SDK.

Specifications and undocumented specifications are subject to change without notice.
For the most up-to-date specifications, visit thermal.com/oem

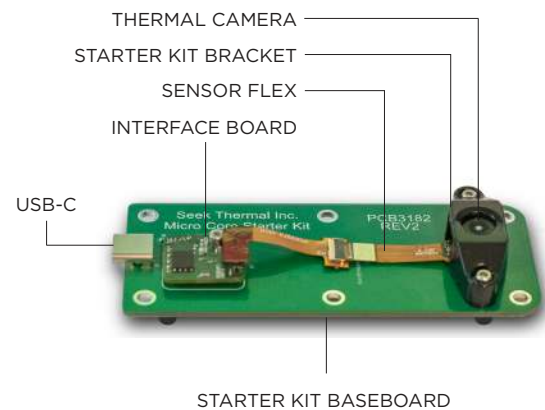


Everything you need to get started with thermal imaging.

Starter Kits enable your project team to begin development with Micro Core quickly and easily. Get access to the Developer Portal with SDKs, APIs, and other important documentation to ensure your project is a success. Purchase a Starter Kit today to begin your evaluation.

INCLUDED IN A STARTER KIT

- **Micro Core:** Thermal camera with Interface Board Kit
- **Starter Kit Baseboard:** Development board with USB-C port.
- **Cable:** USB-C to USB-A cable.
- **Developer Portal Access:** Get access to SDKs, APIs, a Sample Viewer and other support tools.



STARTER KIT PART NUMBERS

| Resolution | Lens | HFOV | Interface Board Kit | Frame Rate | Part Number |
|------------|--------------|------|---------------------|------------|-------------|
| 200 x 150 | 1.8mm f/1.10 | 81° | Provided by Seek | < 9Hz | MS201SP |
| 200 x 150 | 2.3mm f/1.05 | 61° | Provided by Seek | < 9Hz | MS202SP |

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Seek Thermal engineers and manufactures affordable, high-resolution thermal imaging cameras and OEM thermal cores. Founded by industry pioneers who spent 40 years advancing the state of military and professional-grade thermal technologies, Seek Thermal has developed a breakthrough line of products at competitive price points making this technology more accessible to manufacturers and end users. The company's products serve the firefighting, law enforcement and commercial markets, among others, under its own brand and OEM offerings.