

Mosaic Core Specification

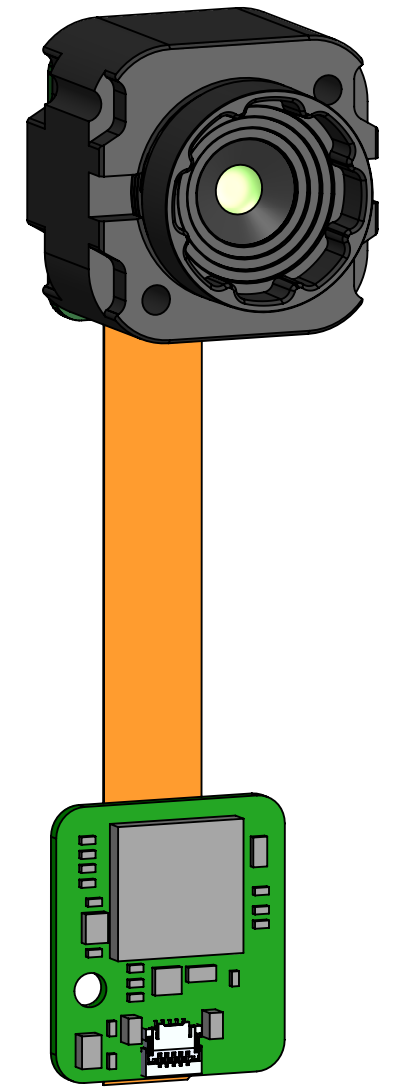
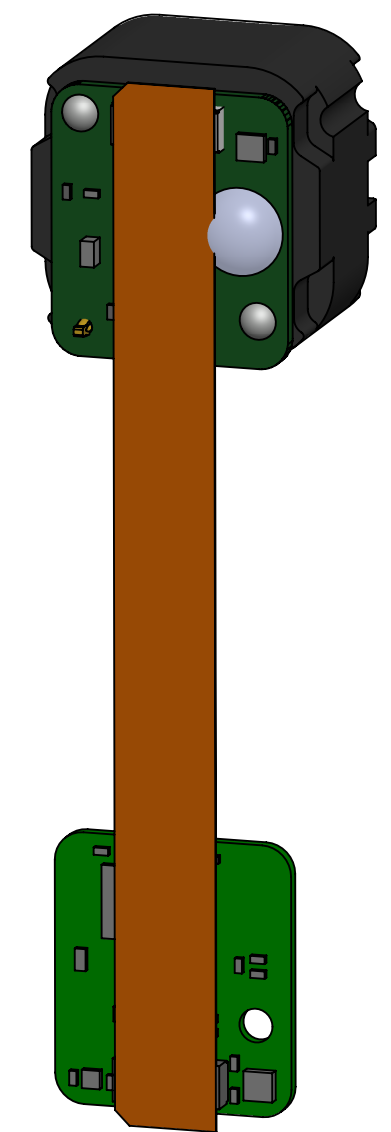
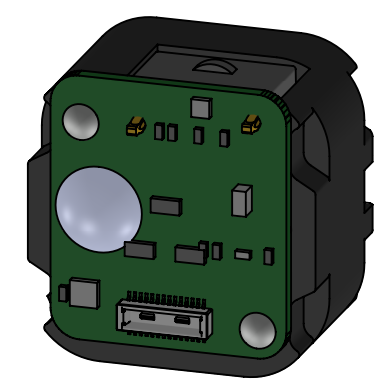
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|--|--|--|--|---------------|--|-------------------|--|
| Core Number: C314SPX | | Starter Kit Number: S314SPX | | Rev. 3 | | 11/05/2021 | |
| Product Specifications: | | Description | | | | | |
| Microbolometer | | Uncooled Vanadium Oxide | | | | | |
| Pixel Pitch | | 12 Microns | | | | | |
| Spectral Response | | 7.8 - 14 Microns | | | | | |
| Sensor Resolution (Array Format) | | 320 (h) x 240 (v); 76,800 pixels | | | | | |
| Frame Rate | | Fast Frame - up to <32Hz | | | | | |
| Non-Uniformity Correction (NUC) | | Automatic NUC (with shutter) | | | | | |
| Video Output Interfaces | | USB | | | | | |
| Power: | | | | | | | |
| Power Requirement | | 3.3-5.0V, <50mW (Core only), 300mW (Core + Coprocessor Board) | | | | | |
| Optical & Mechanical: | | | | | | | |
| Focal Length | | 4.0mm EFL | | | | | |
| F-number (Focal Length/aperture) | | f/1.00 | | | | | |
| Spatial Resolution (IFOV, center) | | 3.00 | | | | | |
| Field of View (FOV) | | 56° Horizontal x 42° Vertical | | | | | |
| Detection Range | | 333m (based on Johnson Criteria) | | | | | |
| Recognition Range | | 83m (based on Johnson Criteria) | | | | | |
| Identification Range | | 48m (based on Johnson Criteria) | | | | | |
| Distance to Spot Ratio | | 56:1 | | | | | |
| Core Size / Core Weight | | 20mm x 20mm x 21mm | | | | Core Weight: 12 g | |
| Seek Software Development Kit: | | | | | | | |
| Supported Platforms | | USB: Seek Linux, Windows, & Android SDK | | | | | |
| Output Formates (User selectable) | | Linux / Windows SDK | | | Android SDK | | |
| | | 16-bit filtered pre AGC | | | 16-bit filtered pre AGC | | |
| | | 32-bit ARGB post colorization. | | | 32-bit ARGB post colorization in the bitmap image. | | |
| | | 32-bit floating point or 16-bit fixed point | | | 32-bit floating point or 16-bit fixed point thermography | | |
| Imaging Specifications: | | Calibrated Output in °C, °F, K | | | | | |
| Imaging Range | | -40°C to +330°C at ambient operating temprature | | | | | |
| Thermography Accuracy | | Center spot temperature greater of ±5°C or 5% between 5°C to 140°C | | | | | |
| | | Center spot temperature greater of ±10°C or 10% (typical) above 140°C | | | | | |
| | | All measured at 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. | | | | | |
| Sensor Sensitivity | | 65 mK (typical), <100 mK (max) @ 25°C | | | | | |
| Emmissivity | | Factory default emissivity is set to 0.97. Emissivity is adjustable using the SDK. | | | | | |
| Environmental Conditions: | | | | | | | |
| Operating Temperature Range | | -10°C to +60°C (-14°F to 140°F) | | | | | |
| Storage Temperature Range | | -40°C to +80°C (-40°F to 176°F) | | | | | |
| Solar Protection | | Yes | | | | | |
| Humidity | | 10%~95%RH, non-condensing | | | | | |
| Regulatory | | ROHS, WEEE, REACH | | | | | |
| Accessories: | | | | | | | |
| Cushion | | Yes | | | | | |
| Bracket | | Yes | | | | | |
| Sensor Flex | | Yes | | | | | |
| Coprocesor Board | | Yes | | | | | |
| USB Flex | | Yes | | | | | |
| | | <p>The diagram illustrates the accessories provided. On the left, the 'THERMAL CORE' includes a white cushion, a black thermal camera, and a white bracket. On the right, the 'COPROCESSOR BOARD AND INTERFACE KIT' includes a yellow sensor flex, a green interface board, and a yellow USB flex. Below the interface board, it notes: 'Provided by seek or receive design files for integration into other electronics'.</p> | | | | | |
| Customer Responsibilities: | | | | | | | |
| IP Rating | | IP67 | | | | | |
| Shock/Vibe | | Customer responsibility with proper integration into final product housing | | | | | |

THIS DRAWING COVERS THE FOLLOWING SKUS:

- C2*4*
- C3*4*
- S2*4*
- S3*4*

NO COPROCESSOR BOARD

"P" OPTION WITH COPROCESSOR BOARD



NOTES:

1. SEE 3D CAD FILE FOR FULL GEOMETRY.
2. KEYPPOINT FOR SHUTTER CLEARANCE.
3. LENS ADHESIVE DOES NOT EXTEND ABOVE FRONT FACE.
4. THIS DESIGN IS CAPABLE OF BEING IP67 WHEN USED WITH APPROPRIATE SEALING DESIGN. SEE MOSAIC DATASHEET.
5. ADHESIVE BUMP PRESENT ON <9Hz CORES.
6. PROCESSOR BOARD AND FLEX INCLUDED WITH "P" OPTION CORES.

| | | | | |
|--|-----------|--|-----|-----------|
| MATERIAL | SEE NOTES | DRAWN | DLM | 27MAR2019 |
| FINISH | SEE NOTES | APPR. | | |
| UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MM (IN) IN ACCORDANCE WITH ASME Y14.5-2009 | | THIRD ANGLE PROJECTION | | |
| GENERAL TOLERANCES 0.5 TO 6 ±0.1 [.004] > 6 TO 30 ±0.2 [.008] > 30 TO 120 ±0.2 [.008] > 120 TO 400 ±0.3 [.012] ANGLES ±1° | | THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SEEK THERMAL. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT WRITTEN PERMISSION IS PROHIBITED. | | |

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TITLE: DOC, INTERFACE CONTROL DRAWING, MECH, 4.0MM MOSAIC

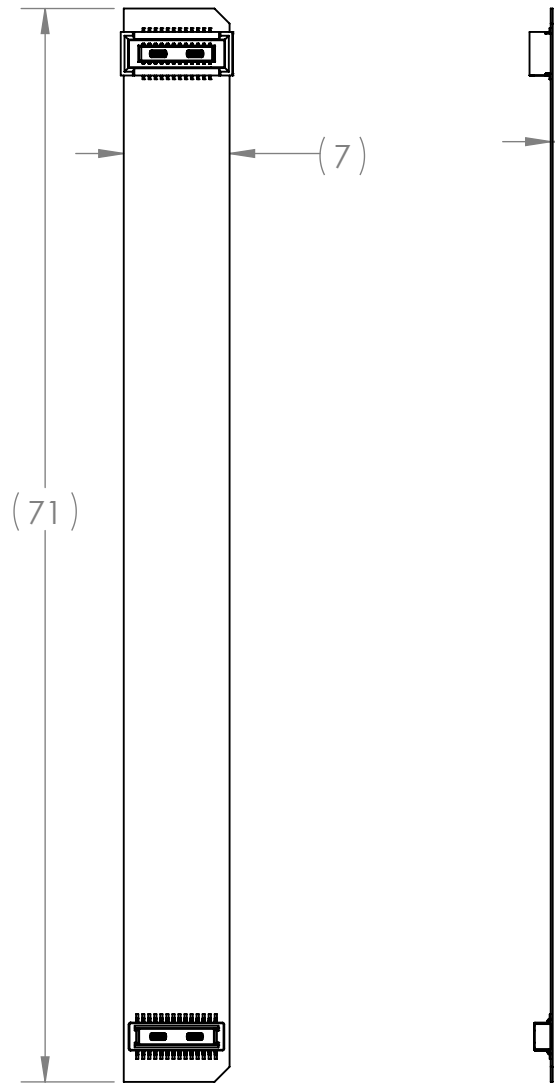
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| SIZE | DWG. NO. | REV |
| B | DOC_243 | 3 |

SCALE: 2:1 SHEET 1 OF 2

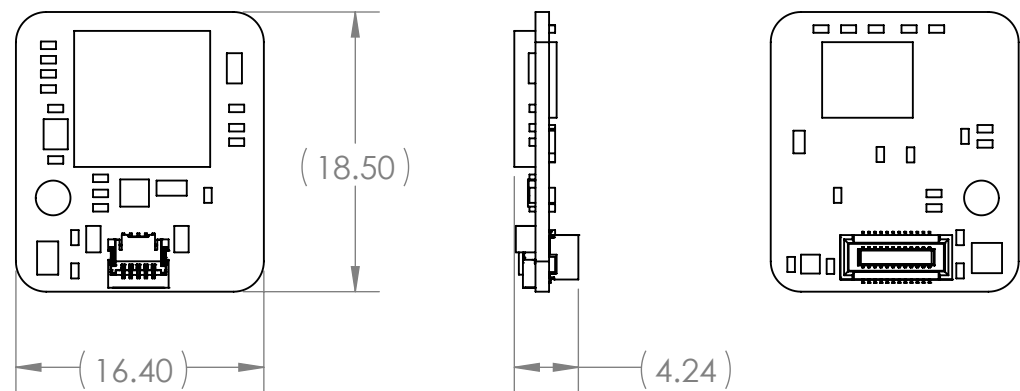
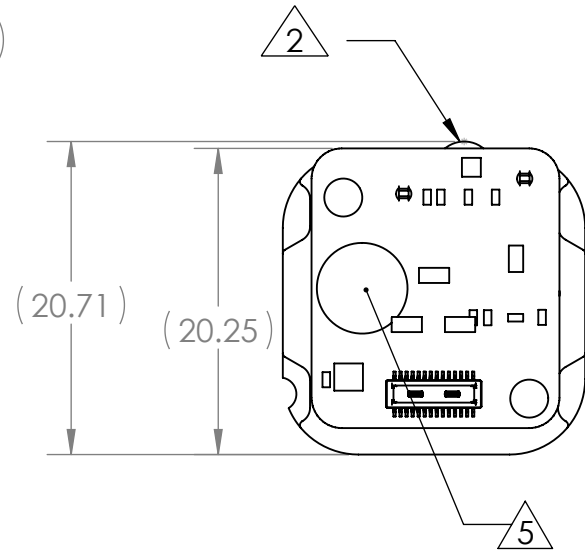
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D
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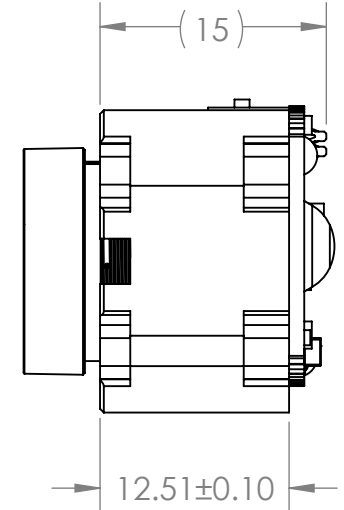
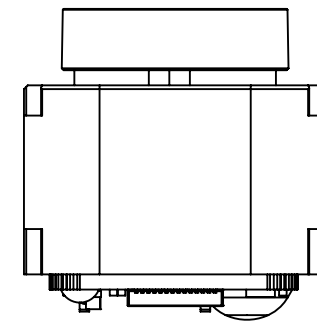
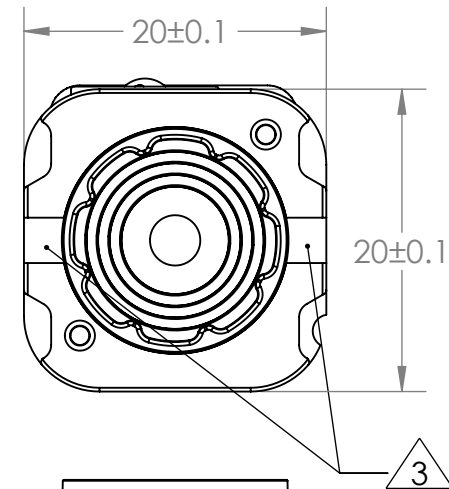
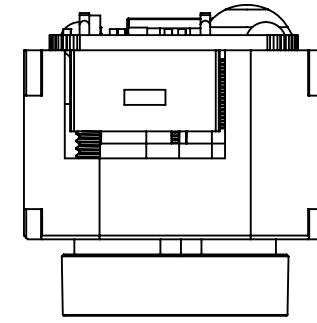
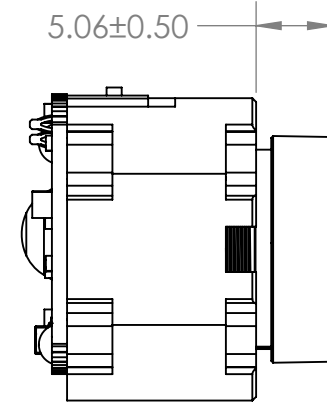
D
C
B
A



FLEX CABLE



COPROCESSOR BOARD



THERMAL IMAGING CORE

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TITLE: DOC, INTERFACE CONTROL
DRAWING, MECH, 4.0MM MOSAIC

| | | |
|------------------|----------------------------|-----------------|
| SIZE B | DWG. NO. DOC_243 | REV 3 |
| SCALE: 2:1 | | SHEET 2 OF 2 |

8 7 6 5 4 3 2 1