

## TECHNICAL SUMMARY

## 320 x 240 RESOLUTION

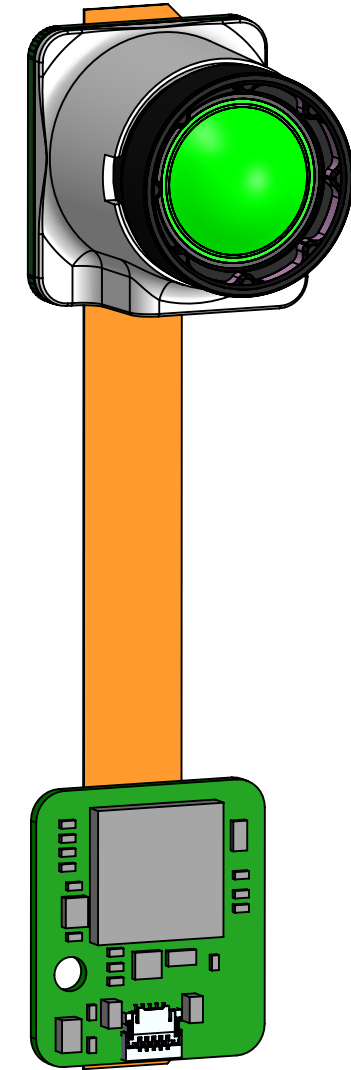
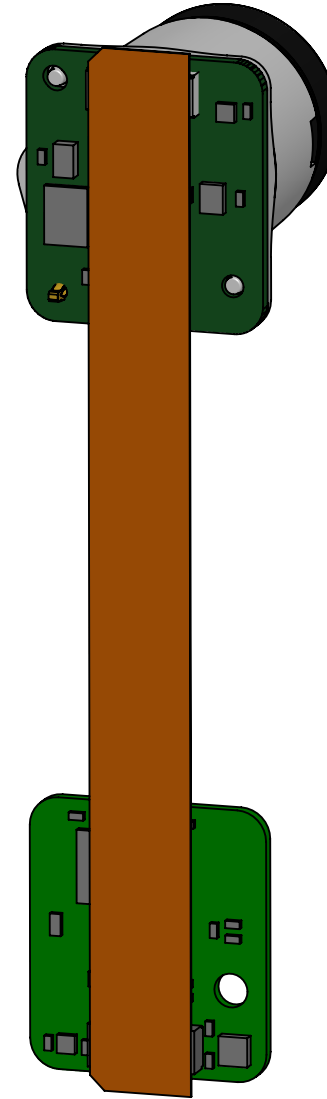
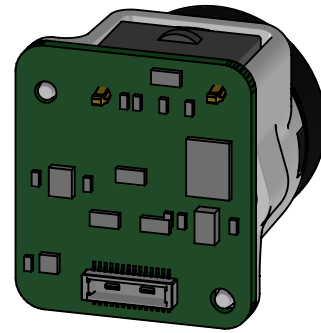
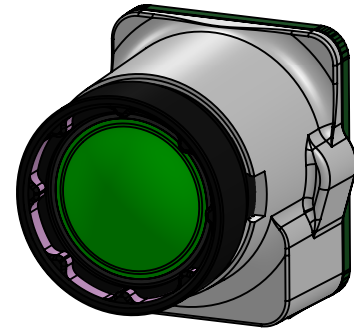
| Specifications                      |  | Description                                       |
|-------------------------------------|--|---|
| Microbolometer                      | Uncooled Vanadium Oxide  |   |
| Pixel Pitch                         | 12 Microns   |   |
| Spectral Response                   | 7.8 - 14 Microns   |   |
| Sensor Resolution (Array Format)    | 320 (h) x 240 (v); 76,800 pixels   |   |
| Frame Rate                          | Up to 27 Hz  |   |
| Imaging Range <sup>1</sup>          | -40°C to 330°C   |   |
| Sensor Sensitivity                  | 65 mK (typical), <100 mK (max) @ 25°C  |   |
| Non-Uniformity Correction (NUC)     | Automatic NUC (with shutter)   |   |
| Video Output Interfaces             | USB  |   |
| Supply Voltage                      | 3.3V to 5.0V   |   |
| Power: Core Only                    | <50mW  |   |
| Power: Core + Interface Board       | 300mW  |   |
| Output Frame Formats                |  |   |
| Supported OS                        | Linux / Windows SDK  | Android SDK                                       |
| Partially Processed                 | 16-bit corrected or pre AGC  | 16-bit filtered pre AGC                           |
| Colorized Display                   | ARGB888, RGB565, AYUV, or YUY2   | 32-bit ARGB post colorization in the Bitmap image |
| B/W Display                         | 8-bit Greyscale  | NA  |
| Temperature                         | 32-bit floating point or 16-bit fixed point thermography   | 16-bit fixed point thermography                   |
| Optics & Mechanical                 |  |   |
| Focal Length                        | 9.1mm  |   |
| F-number (focal length/aperture)    | f/1.0  |   |
| Spatial Resolution (IFOV, center)   | 1.3  |   |
| HFOV <sup>4</sup>                   | 24°  |   |
| VFOV <sup>4</sup>                   | 18°  |   |
| Detection Range <sup>2</sup>        | 758m   |   |
| Recognition Range <sup>2</sup>      | 190m   |   |
| Identification Range <sup>2</sup>   | 108m   |   |
| Distance to Spot Ratio              | 126:1  |   |
| Ingress Protection                  | IP67   |   |
| Core Dimensions (L x W x H)         | 20 x 17.4 x 18.5mm   |   |
| Core Weight                         | 4.4 g  |   |
| Focus                               | Fixed  |   |
| Lens Material                       | Chalcogenide   |   |
| Thermography                        |  |   |
| Temperature Calibration             | Calibrated Output in °C, °F, K   |   |
| Temperature Accuracy <sup>1,3</sup> | The greater of ±5°C or 5% between 5°C to 140°C scene temperatures<br>Typical performance of ±10% between 140°C to 330°C scene temperatures Contact your sales rep for higher temperature accuracy up to 330°C and beyond |   |
| Environmental                       |  |   |
| Operating Temperature Range         | -10°C to 60°C<br>Contact your sales rep for higher operating temperature ranges  |   |
| Storage Temperature Range           | -40°C to 80°C  |   |
| Solar Protection                    | Yes  |   |
| Humidity                            | 10%~95%RH, non-condensing  |   |
| Regulatory                          | ROHS, WEEE, REACH  |   |

- 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 and measurement distances.
- Based on Johnson Criteria.
- Factory default emissivity is set to 0.97. Emissivity is adjustable using the SDK. See data sheet for more information.

THIS DRAWING COVERS  
THE FOLLOWING SKUS:  
SD319SPX  
CD319SX  
CD319SPX

NO INTERFACE BOARD

"P" OPTION WITH INTERFACE BOARD



NOTES:

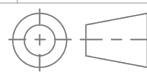
1. SEE 3D CAD FILE FOR FULL GEOMETRY.

2.  KEYPPOINT FOR SHUTTER CLEARANCE.

3.  LENS ADHESIVE DOES NOT EXTEND OUTSIDE RADIAL SURFACE.

4. THIS DESIGN IS CAPABLE OF BEING IP67 WHEN USED WITH APPROPRIATE SEALING DESIGN. SEE MOSAIC DATASHEET.

5. INTERFACE BOARD AND FLEX INCLUDED WITH "P" OPTION CORES.

|  |           |  |   |         |
|--|-----------|--|---|---------|
| MATERIAL   | SEE NOTES | DRAWN  | AD  | 8/29/22 |
| FINISH   | SEE NOTES | APPR.  |   |         |
| UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MM (IN)<br>IN ACCORDANCE WITH<br>ASME Y14.5-2009  |           | THIRD<br>ANGLE<br>PROJECTION   |  |         |
| GENERAL TOLERANCES<br>0.5 TO 6 ±0.1 [.004]<br>> 6 TO 30 ±0.2 [.008]<br>> 30 TO 120 ±0.2 [.008]<br>> 120 TO 400 ±0.3 [.012]<br>ANGLES ±1° |           | <b>PROPRIETARY AND CONFIDENTIAL</b><br>THE INFORMATION CONTAINED<br>IN THIS DRAWING IS THE SOLE<br>PROPERTY OF SEEK THERMAL.<br>ANY REPRODUCTION IN PART OR<br>AS A WHOLE WITHOUT WRITTEN<br>PERMISSION IS PROHIBITED. |   |         |

**Seek™**  
thermal

TITLE: DOC, ICD, MECH, 9.1MM  
LIGHT WEIGHT MOSAIC

|          |                |           |
|----------|----------------|-----------|
| SIZE     | DWG. NO.       | REV       |
| <b>B</b> | <b>DOC_417</b> | <b>01</b> |

SCALE: 2:1 SHEET 1 OF 2

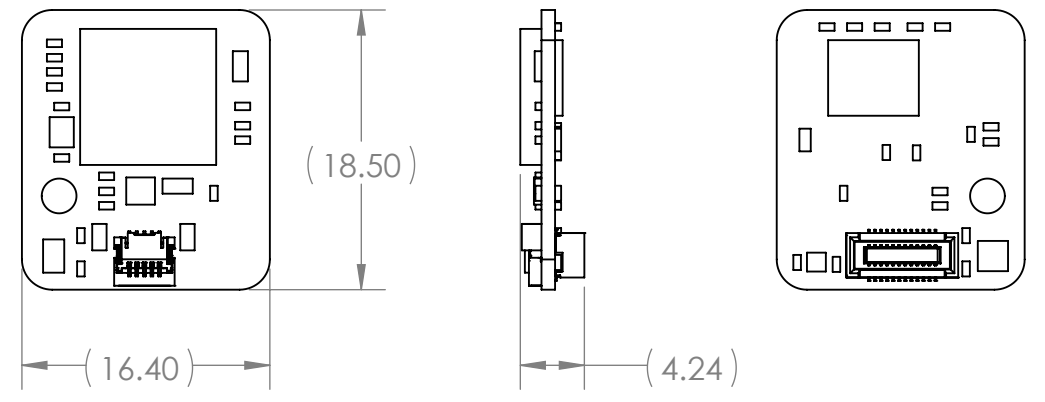
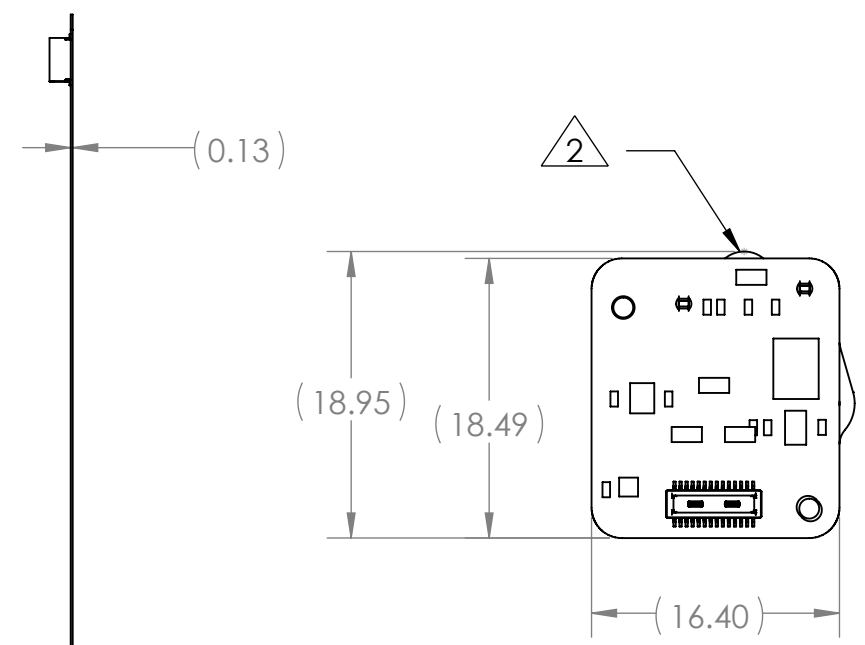
8 7 6 5 4 3 2 1

D  
C  
B  
A

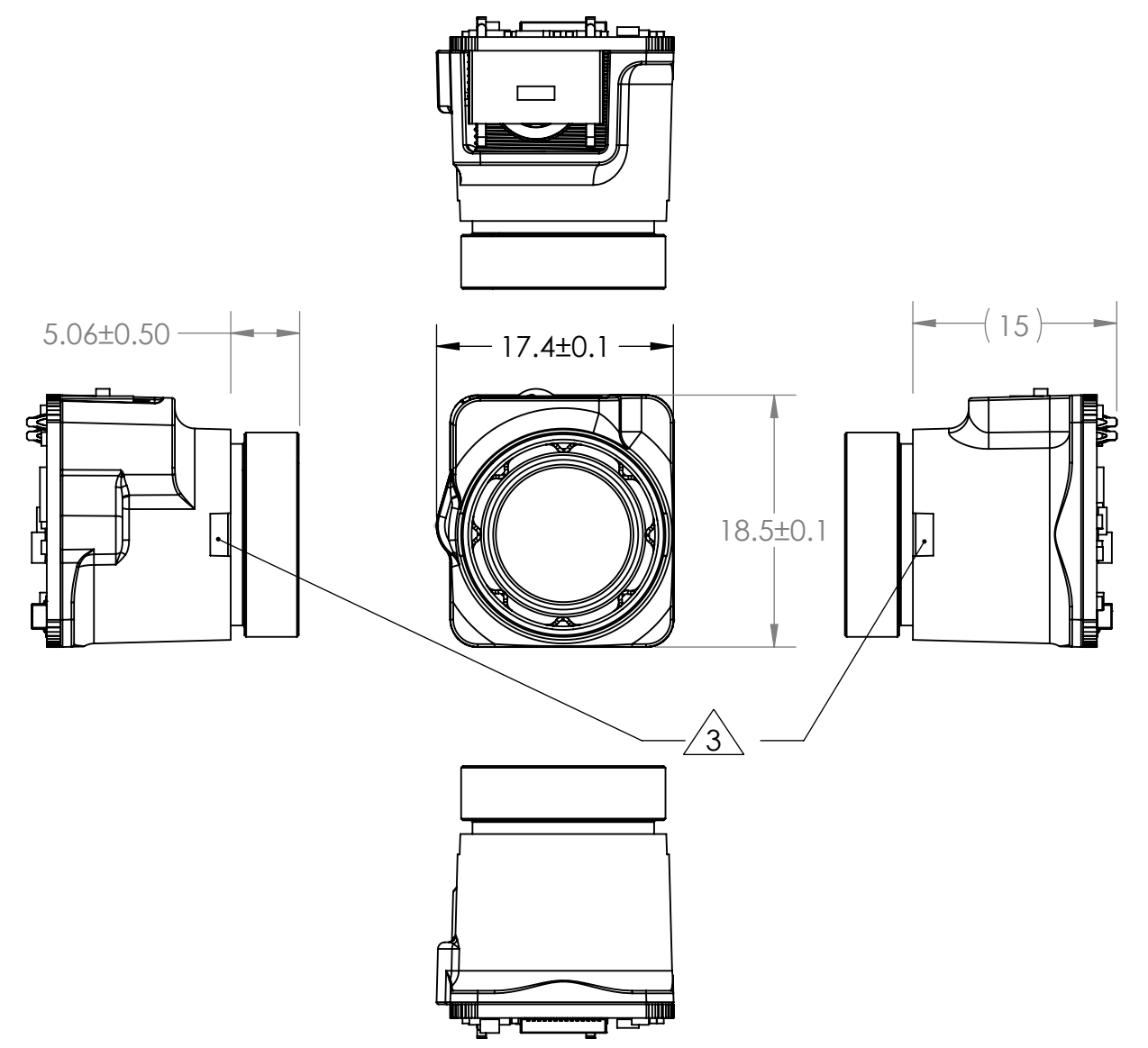
D  
C  
B  
A



FLEX CABLE



INTERFACE BOARD



THERMAL IMAGING CORE

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**Seek™**  
 thermal

TITLE: DOC, ICD, MECH, 9.1MM LIGHT WEIGHT MOSAIC

|            |                |              |
|------------|----------------|--------------|
| SIZE       | DWG. NO.       | REV          |
| <b>B</b>   | <b>DOC_417</b> | <b>01</b>    |
| SCALE: 2:1 |                | SHEET 2 OF 2 |

8 7 6 5 4 3 2 1