

M U L T I S E N S E K S 2 1 i
P R E L I M I N A R Y S P E C I F I C A T I O N S H E E T

A rugged stereo computer sensor with on-board processing, intelligently designed for safe operations in challenging indoor environments.



MULTISENSE KS21i

| SPECIFICATIONS | KS21i |
|-----------------------------|---------------------------|
| RUGGEDIZATION | |
| OPERATING TEMPERATURE | -30° to 65°C |
| IP RATING (CABLES ATTACHED) | IP 54 |
| OPERATING RELATIVE HUMIDITY | 93% |
| REGULATORY | RoHS |
| SHOCK | 100 G, 2ms |
| VIBRATION | 10 GRMS |
| GRAVEL BOMBARDMENT | ROCK CHIP RESISTANT |
| ON-BOARD PROCESSING | |
| PROCESSOR | 1.2 GHZ QUAD CORE ARM A53 |
| REAL-TIME PROCESSING | ARM CORTEX R5 |
| GPU | 500Mhz ARM MALI-400 MP2 |
| RAM | 4 GB DDR4 W/ ECC |
| MAPPING COMPONENTS | IMU |
| OPERATING SYSTEM | PETALINUX |
| PROGRAMMABLE LOGIC | - |
| PHYSICAL | |
| HEIGHT | Approx. 5cm |
| WIDTH | Approx. 29cm |
| DEPTH | Approx. 14cm |
| CONSTRUCTION | EXTRUDED ALUMINUM |

| SPECIFICATIONS | KS21i |
|---|-----------------------------------|
| IMAGE SENSOR PAYLOAD (MONO-CHROME) | |
| RESOLUTION | 1920 x 1200 |
| SHUTTER TYPE | GLOBAL SHUTTER |
| FRAME RATE | 30 FPS MAX |
| BIT DEPTH | 8 |
| APERTURE | F/2.6 |
| IMAGE SENSOR PAYLOAD (RGB) | |
| RESOLUTION | 1920 x 1188 |
| SHUTTER TYPE | ROLLING SHUTTER |
| FRAME RATE | 30 FPS MAX |
| FILTER | IR CUT |
| BIT DEPTH | 8 |
| APERTURE | F/2.8 |
| OPTICS | |
| ALGORITHM | SGM (SEMI-GLOBAL STEREO MATCHING) |
| STEREO BASELINE | 21.0cm |
| STEREO ALGORITHM SPEED | 30 FPS @ 0.5MP, 256 DISP |
| RANGE | 0.5 - 20m |
| VIEW ANGLE | PARALLEL TO MOUNTING PLANE |
| COLOR FOV (RAW) | 135° H x 84° V |
| STEREO FOV (RAW) | 135° x 84° |
| FOCAL LENGTH | 3.9mm |

M U L T I S E N S E K S 2 1 i

| SPECIFICATIONS | KS21i |
|----------------------------|-------------------------------|
| ELECTRICAL | |
| VOLTAGE (RANGE) | 9 - 36 VDC |
| OVERVOLTAGE | 48 VDC |
| COLD CRANKING | 6 V |
| POWER (NOMINAL) | 12 W (ALGORITHM-DEPENDENT) |
| COMMUNICATIONS PROTOCOL | 1000BASE-T |
| *DATA CONNECTION | RJ45 |
| *POWER CONNECTION | D-CODED M-12 |
| IR LASER EMITTER | |
| NUMBER OF DOTS | 11,400 |
| WAVELENGTH | 850 nm |
| FIELD OF ILLUMINATION | 130° x 51° |

WWW.CARNEGIEROBOTICS.COM

Specifications are subject to change without notice. 2024 All rights reserved. CR-03252021