

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.



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

SPECIFICATIONS	KS21i	S27	S30
RUGGEDIZATION			
OPERATING TEMPERATURE	-30° to 65°C	-40 ° to 80 °C	-40 ° to 80 °C
IP RATING (CABLES ATTACHED)	IP 54	IP 67	IP 67
OPERATING RELATIVE HUMIDITY	93%	93%	93%
REGULATORY	RoHS	RoHS	RoHS
SHOCK	100 G, 2ms	100 G, 2ms	100 G, 2ms
VIBRATION	10 GRMS	15 GRMS	6.6 GRMS
GRAVEL BOMBARDMENT	ROCK CHIP RESISTANT	ROCK CHIP RESISTANT	ROCK CHIP RESISTANT
ON-BOARD PROCESSING			
PROCESSOR	1.2 GHZ QUAD CORE ARM A53	1.2 GHZ QUAD CORE ARM A53	1.2 GHZ QUAD CORE ARM A53
REAL-TIME PROCESSING	ARM CORTEX R5	ARM CORTEX R5	ARM CORTEX R5
GPU	500Mhz ARM MALI-400 MP2	500Mhz ARM MALI-400 MP2	500Mhz ARM MALI-400 MP2
RAM	4 GB DDR4 W/ ECC	4 GB DDR4 W/ ECC	4 GB DDR4 W/ ECC
MAPPING COMPONENTS	IMU	IMU	IMU
OPERATING SYSTEM	PETALINUX	PETALINUX	PETALINUX
PROGRAMMABLE LOGIC	-	UP TO 150,000 LOGIC CELLS	UP TO 150,000 LOGIC CELLS
PHYSICAL			
HEIGHT	Approx. 5cm	6.0cm	5.6cm
WIDTH	Approx. 29cm	35.0cm	36.4cm
DEPTH	Approx. 14cm	16.0cm	14.1cm
CONSTRUCTION	EXTRUDED ALUMINUM	MACHINED ALUMINUM	MACHINED ALUMINUM

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

SPECIFICATIONS	KS21i	S27	S30
IMAGE SENSOR PAYLOAD (MONOCHROME)			
RESOLUTION	1920 x 1200	1920 x 1280	1920 x 1280
SHUTTER TYPE	GLOBAL SHUTTER	GLOBAL SHUTTER	GLOBAL SHUTTER
FRAME RATE	30 FPS MAX	30 FPS MAX	30 FPS MAX
BIT DEPTH	8	8	8
APERTURE	F/2.6	F/2.8	F/2.6
IMAGE SENSOR PAYLOAD (RGB)			
RESOLUTION	1920 x 1188	1920 x 1188	1920 x 1188
SHUTTER TYPE	ROLLING SHUTTER	ROLLING SHUTTER	ROLLING SHUTTER
FRAME RATE	30 FPS MAX	30 FPS MAX	30 FPS MAX
FILTER	IR CUT	IR CUT	IR CUT
BIT DEPTH	8	8	8
APERTURE	F/2.8	F/2.8	F/2.6
OPTICS			
ALGORITHM	SGM (SEMI-GLOBAL STEREO MATCHING)	SGM (SEMI-GLOBAL STEREO MATCHING)	SGM (SEMI-GLOBAL STEREO MATCHING)
STEREO BASELINE	21.0cm	27.0cm	30.0cm
STEREO ALGORITHM SPEED	30 FPS @ 0.5MP, 256 DISP	30 FPS @ 0.5MP, 256 DISP	30 FPS @ 0.5MP, 256 DISP
RANGE	0.5 - 20m	1.4 - 30m	1.4 - 30m
VIEW ANGLE	PARALLEL TO MOUNTING PLANE	24° BELOW HORIZONTAL	PARALLEL TO MOUNTING PLANE
COLOR FOV (RAW)	135° H x 84° V	135° H x 84° V	91° H x 53° V
STEREO FOV (RAW)	135° x 84°	91° H x 54° V	91° H x 54° V
FOCAL LENGTH	3.9mm	3.9mm (STEREO) / 2.5mm (COLOR)	3.9mm (STEREO) / 3.9mm (COLOR)

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

SPECIFICATIONS	KS21i	S27	S30
ELECTRICAL			
VOLTAGE (RANGE)	9 - 36 VDC	9 - 36 VDC	9 - 36 VDC
OVERVOLTAGE	48 VDC	48 VDC	48 VDC
COLD CRANKING	6 V	6 V	6 V
POWER (NOMINAL)	12 W (ALGORITHM-DEPENDENT)	10 - 15 W (ALGORITHM-DEPENDENT)	10 - 15 W (ALGORITHM-DEPENDENT)
COMMUNICATIONS PROTOCOL	1000BASE-T	CAN, CAN-FD	1000BASE-T
*DATA CONNECTION	RJ45	8-PIN X-CODED M12	8-PIN X-CODED M12
*POWER CONNECTION	D-CODED M-12	8-PIN DEUTSCH	STANDARD 14-PIN CIRCULAR
IR LASER EMITTER			
NUMBER OF DOTS	11,400	N / A	N / A
WAVELENGTH	850 nm	N / A	N / A
FIELD OF ILLUMINATION	130° x 51°	N / A	N / A

*TORQUE VALUE: 3.5 IN/LBS