MULTISENSE® S27

PRODUCT SUMMARY

RUGGEDIZED STEREO VISION

The MultiSense® S27 is a rugged stereo computer sensor with on-board processing, intelligently designed to facilitate complete and standalone sensor solutions in harsh outdoor environments.

RUGGED The MultiSense® S27 features a machined aluminum housing that can withstand harsh outdoor environments. Each unit is rigorously tested and held to the highest quality and design standards to ensure consistent and dependable operation.

APPLICATIONS The durable construction of the MultiSense® S27 allows it to be utilized in a number of outdoor applications, such as agriculture, oil and gas, construction, and marine environments.

ON-BOARD PROCESSING All MultiSense® stereo sensors feature powerful on-board processing, eliminating the need for costly peripherals. Combined with the MultiSense® Viewer software, the S27 allows you to view your data in real-time so you don't miss a thing.

PERCEPTION Our stereo sensors are the perfect compliment to systems with LiDAR sensors, as they are designed to see through outdoor elements such as rain, dust, and fog, which can complicate LiDAR data.

GROUND PLANE MODELING The on-board IMU in conjunction with the stereo imaging and on-board processing allow for accurate point cloud generation and ground plane modeling of the surrounding area, which is critical for autonomous applications within dynamic environments.

BENEFITS

- RUGGEDIZED SENSOR FOR OUTDOOR OPERATION
- POWERFUL ON-BOARD PROCESSING
- FLEXIBLE MOUNTING OPTIONS
- ELECTRICAL PROTECTION ON ALL I/O
- PERFORMS IN SITUATIONS WHERE LIDAR FAILS

FEATURES

- IP67 RATED
- -40° - 176°F OPERATING TEMPERATURE
- 1.2Ghz QUAD-CORE ARM® PROCESSOR
- 500Mhz 28nm DUAL-CORE VIDEO PROCESSOR
- 4 GB DDR4 RAM
- BMI160 IMU

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CARNEGIE ROBOTICS

MULTISENSE® S27

CARNEGIE ROBOTICS

RUGGEDIZATION

OPERATING TEMPERATURE	-40° - 176°F (-40 ° - 80 °C)
IP RATING (CABLES ATTACHED)	IP67
OPERATING RELATIVE HUMIDITY	93%
REGULATORY	RoHS
SHOCK	100G, 2ms
VIBRATION	15 GRMS
GRAVEL BOMBARDMENT	ROCK CHIP RESISTANT

COMPUTE

PROCESSOR	1.2Ghz QUAD CORE ARM® A53
REAL-TIME PROCESSING	ARM® CORTEX R5
GPU	500Mhz ARM® MALI-400 MP2
RAM	4GB DDR4 W/ ECC
MAPPING COMPONENTS	IMU (BMI160)
OPERATING SYSTEM	PETALINUX
PROGRAMMABLE LOGIC	UP TO 150,000 LOGIC CELLS

ELECTRICAL

VOLTAGE RANGE	9 - 36VDC
OVERVOLTAGE	48VDC
COLD CRANKING	6V
POWER (NOMINAL)	10 - 15W (ALGORITHM-DEPEDENT)
COMMUNICATIONS PROTOCOL	CAN, CAN-FD
DATA CONNECTION	8-PIN X-CODED M12
POWER CONNECTION	8-PIN DEUTSCH

PHYSICAL

HEIGHT	2.4in (6.0cm)
WIDTH	13.8in (35.0cm)
DEPTH	6.3in (16.0cm)
CONSTRUCTION	MACHINED ALUMINUM

IMAGE SENSOR PAYLOAD

	MONOCHROME	RGB
RESOLUTION	1920 x 1280	1920 x 1188
SHUTTER TYPE	GLOBAL SHUTTER	ROLLING SHUTTER
FRAME RATE	30 FPS MAX	30 FPS MAX
BIT DEPTH	8	8
APERTURE	F/2.8	F/2.8
FILTER	-	IR CUT

OPTICS

ALGORITHM	SGM (SEMI-GLOBAL STEREO MATCHING)
STEREO BASELINE	10.6in (27.0cm)
STEREO ALGORITHM SPEED	30 FPS @ 0.5MP, 256 DISP
RANGE	4.6 - 98.4ft (1.4 - 30.0m)
VIEW ANGLE	24° BELOW HORIZONTAL
COLOR FOV (RAW)	135° H x 84° V
STEREO FOV (RAW)	91° H x 54° V
FOCAL LENGTH	3.9mm (STEREO) / 2.5mm (COLOR)

MOST RECENT FIRMWARE VERSION AVAILABLE HERE:
https://docs.carnegierobotics.com/docs/firmware/update.html