

## SCORPION 3D VENOM CAMERA

### SCOPE

Scorpion Stinger™ is a family of machine vision components. They provide building blocks for OEM and system integrators.

Scorpion Stinger products have focus on:

- industrial strength
- flexibility
- functionality

### 3D FIELD OF VIEW

- From 20 x 20 mm x 15 mm to more than 400 x 300 x 250 mm
- **Resolution: 0.001 mm to 1.0 mm.**
- Nominal working distance: 50 mm to 700 mm

### INTEGRATED LED CONTROL AND FLEXIBLE IO

- Built in strobing for IR and white LEDs
- Supports external light - LED spot
- Optional RPP Lasers
- SMARTcard enables LED sequencing
- Encoder interface and Trigger Delays

### FLEXIBLE INDUSTRIAL HOUSING

- H = 60 mm W = 85 mm L = 160 mm
- Easy connection with Ethernet, USB3 and Hirose connectors.

### HIGH QUALITY IMAGE SENSORS

- VGA to 12 MP Resolution
- GigE and USB3
- Monochrome or colour
- Global and Rolling Shutter
- Typical framerates from .2 to 10 fps - high framerate from 10 - 200 fps

### PROVEN SOFTWARE SUPPORT

- Scorpion Vision Software
- Scorpion Basic 3D
- Scorpion 3D Stinger for Robot Vision

*The Scorpion 3D Venom Camera is a true innovation in the machine vision market; blending 2D and 3D machine vision in a compact camera enabling the most accurate short range 3D stereo vision with resolution from 0.001 mm.*

The global shutter Scorpion 3D Venom Camera is designed to be used in cutting-edge 3D Stereo Vision systems. It excels in short to medium size baseline using a single colour or monochrome camera with resolution from VGA to 12 MP. Two virtual 3D cameras are created by a clever mirror design that focuses on a user specified working distance.

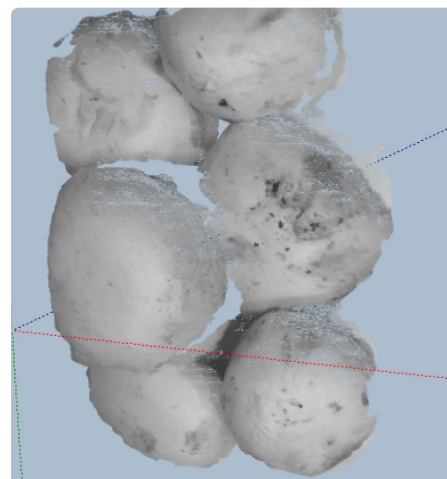
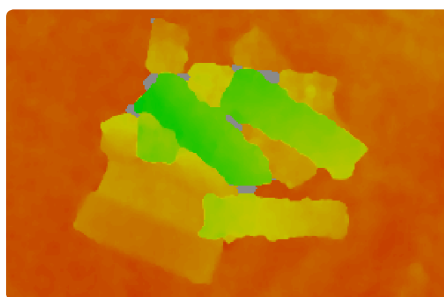
Every camera is factory calibrated to a task with specific resolution at the selected working distance. The unique **One-Push-Calibration** ensures subpixel resolution and **3D resolution from 0.001 mm.**

Main target applications are ID tracking, object tracking, height measurement, object counting and more. Fast feature location and 3D image generation will support fast tracking framerates from 1 to 25 fps.

The Global Shutter 3D camera locates moving objects in real-time. This is ideal for real-time tracking and position servos.



*Supports Scorpion NeuralReader*

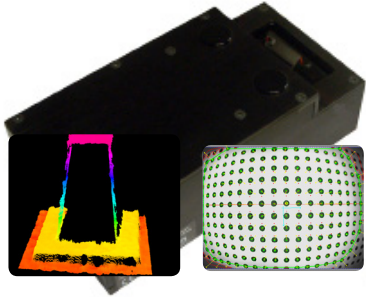


*3D Mushroom Imaging*

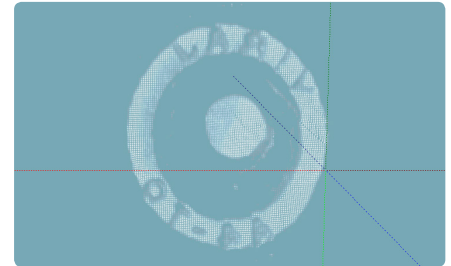
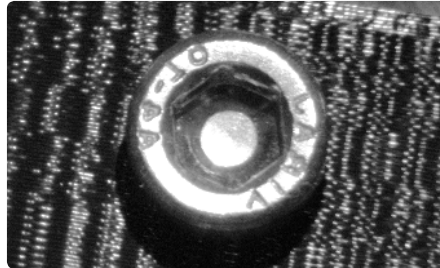
The 3D Venom camera replaces a 2D camera when both 2D and 3D is needed for creating a 100 % robust and accurate solution. The distance to the object is easily determined with the 3D Venom camera. It is connected to a PC with a GigE connection, POE (Power over Ethernet) or an USB3 cable.

### CREATES DENSE 3D POINT CLOUDS - CAN SEE WHERE THERE IS NO CONTRAST

The 3D Camera is the perfect companion for Scorpion Vision Software. Scorpion Vision Software can control multiple 3D cameras from a single Scorpion embedded PC. Multiple 3D cameras are used to provide multiple viewing angles and to extend the 3D FOV without losing resolution. Using the Scorpion SMARTio digital-io multiple Venom cameras capture images in synch or is driven by the encoder signal of a conveyor. The core Scorpion Stinger Technology used to create the Scorpion 3D Venom camera is available for selected OEM partners of Tordivel AS.



Scorpion 3D Venom Camera is supported by multiple accurate 3D calibration methods.



The Global Shutter 3D Venom camera creates a 3D model of a moving object. The task underneath is to verify the depth and 3D shape of the nut head - 10 x per second. The 3D model as a heightmap clearly shows the depth and the shape.

The Scorpion 3D Venom Camera™ is a high performance industrial camera enclosed in an industrialised housing which contains electronics for illumination, camera connectivity and power distribution.

The Scorpion 3D Venom Camera consists of:

- an aluminium enclosure
- one camera including lens and optical image splitter
- Option integrated LED strobing
- Termination panel and cables
- Compact SMARTcard or LEDstrobe

#### POWER CONSUMPTION

The units is powered by PoE (Power over Ethernet) or USB3 or Type typical power consumption is 5 Watts. The actual power consumption depends on the camera configuration.

#### SCORPION 3D VENOM CAMERA VARIANTS

The flexibility of the camera is shown by the variants in camera type, connections and board functionality in the tables below.

CAMERA TYPE
GigE
USB3

CONNECTOR	
Hirose	+24V, GND, +12V, GND Trig In, Expo Out
None	

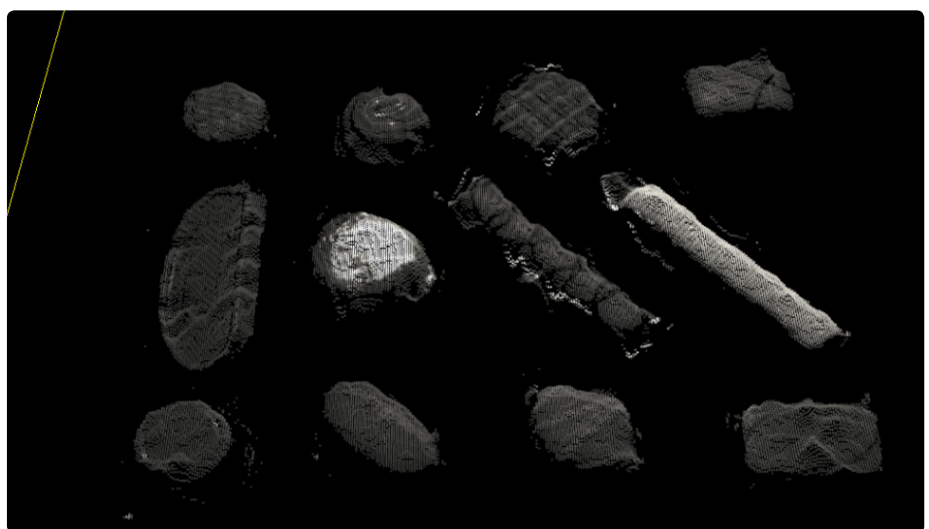
BOARD	POWER	FUNCTIONALITY
SMARTcard	24V in, 5V and 12V out	Strobing with multiple image sequences
LEDstrobe No board	24V in, LED Current	Strobing based on Expo Out Driven directly by the camera cable

#### DIMENSIONS

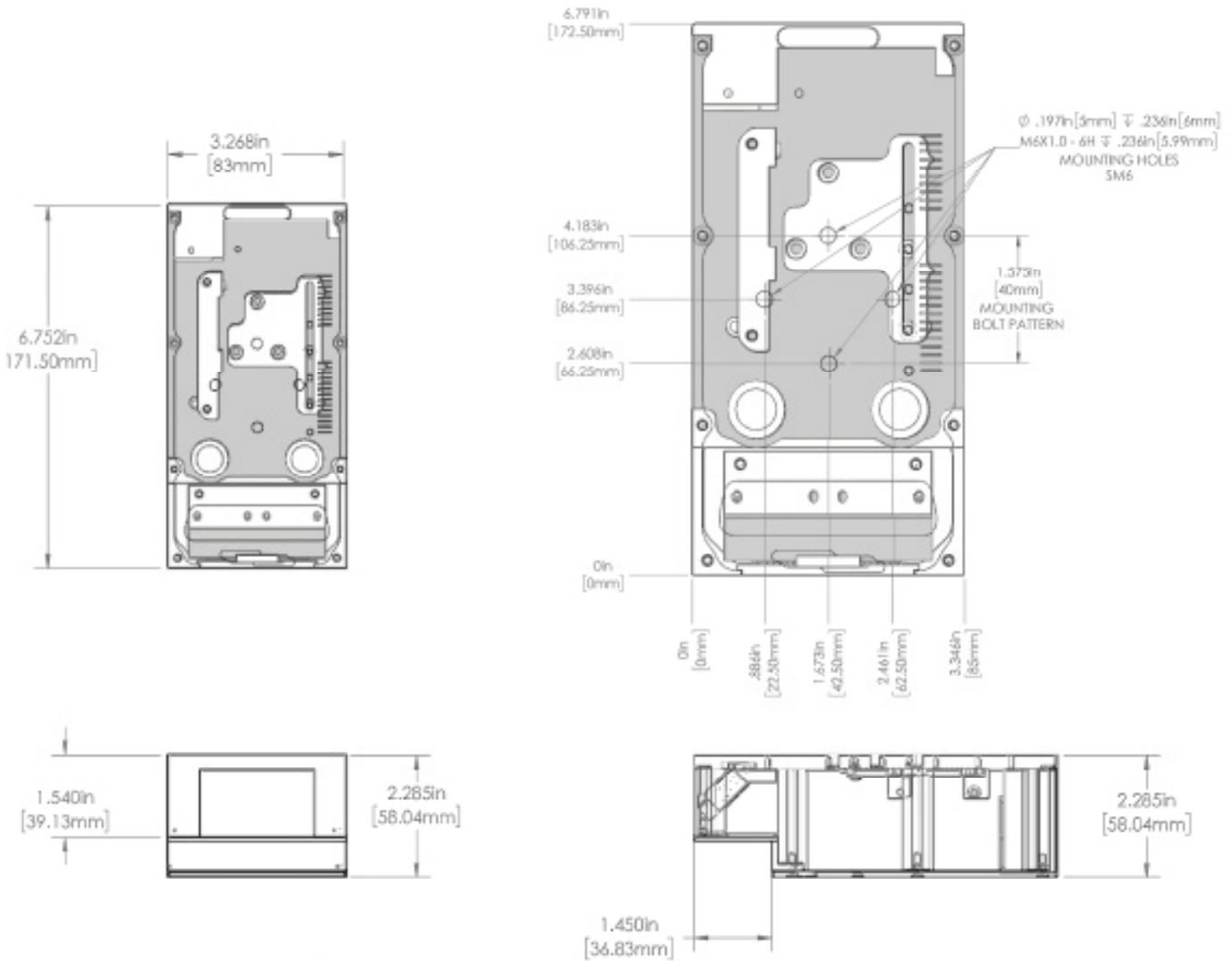
- Height = 58 mm
- Width = 85 mm
- Length = 172 mm
- Weight = 0,5 kg

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Scorpion 3D Venom creates true 3D Models - this is a full chocolate tray



Scorpion 3D Venom Camera dimensions

**SCORPION 3D VENOM CAMERA MODELS**

ARTICLE #	SCORPION 3D VENOM CAMERA SMARTCARD MODEL	OPTIONAL LED	COMMENT
80-V3D-SC-VGA-W-F-POE	SMARTcard VGA 1/3" CCD - 200 fps - POE	White   IR	W = Working distance from 50 to 700 mm
80-V3D-SC-2.3MP-W-F-POE	SMARTcard 2.3 MP 1/1.2" CMOS - POE	Image sequence	F = 3D FOV
80-V3D-SC-5.0MP-W-F-POE	SMARTcard 5.0 MP 1/1.2" CMOS - POE	is supported by	from 20 x 20 mm to 500 x 500 mm
80-V3D-SC-6.0MP-W-F-POE	SMARTcard 6.0 MP Rolling Shutter 1/1.2" CMOS - POE	SMARTcard	<b>GIGE CAMERA AND POE SUPPORT</b>

ARTICLE #	SCORPION 3D VENOM CAMERA LEDSTROBE MODEL	OPTIONAL LED	COMMENT
80-V3D-LS-VGA-W-F-GigE	LEDstrobe VGA 1/3" CCD - 200 fps	White   IR	W = Working distance from 50 to 700 mm
80-V3D-LS-2.3MP-W-F-GigE	LEDstrobe 2.3 MP 1/1.2" CMOS	Multiple LEDs	F = 3D FOV
80-V3D-LS-5.0MP-W-F-GigE	LEDstrobe 5.0 MP 1/1.2" CMOS	are strobed	from 20 x 20 mm to 500 x 500 mm
80-V3D-LS-6.0MP-W-F-GigE	LEDstrobe 6.0 MP Rolling Shutter 1/1.2" CMOS	by LEDstrobe	<b>GIGE OR USB3 models are supported</b>