

SCORPION
3D STINGER™

Tordivel as
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www.scorpionvision.com



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 500 x 300 x 300 mm
- **Resolution: 0.001 mm to 1.0 mm.**
- Nominal working distance: **50 MM TO 700 MM**

INTEGRATED LED CONTROL AND FLEXIBLE IO

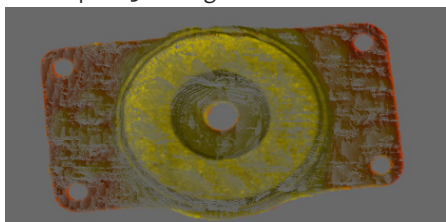
- Built in strobing for IR and white LEDs
- Supports external light - LED spot
- Optional **EXTERNAL RPP LASERS**
- SMARTcard enables LED sequencing
- Optional encoder interface

HIGH QUALITY IMAGE SENSORS

- VGA to 29MP Resolution
- GigE and USB3
- Monochrome or colour
- Global and Rolling Shutter
- Framerates from .2 to 200 fps

PROVEN SOFTWARE SUPPORT

- Scorpion Vision Software
- Scorpion Basic 3D
- Scorpion Stinger Camera Software
- 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.

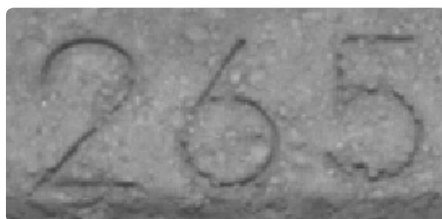
The global shutter **SCORPION 3D VENOM CAMERA** is designed to be used in cutting-edge **3D STEREO VISION** systems. It excels in short to medium size baseline using a single colour or monochrome camera with resolution from VGA to 29 MP. Two virtual 3D cameras are created by a clever mirror design focused at a user specified working distance.

RMS 0.0035 - 0.0044	CamZ 84.7 - 84.7	Points 36 - 36	3D Calibration OK	Baseline 34.46
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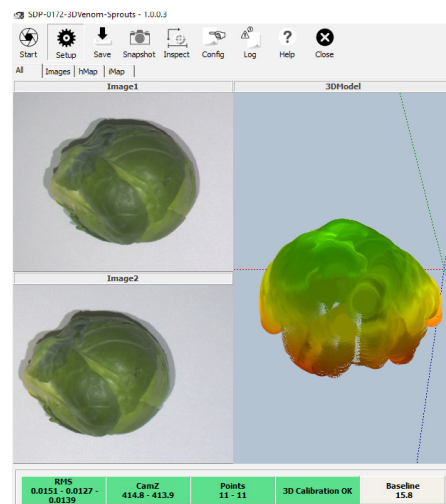
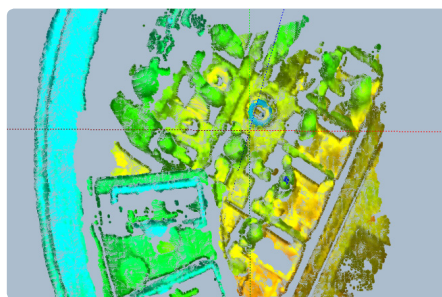
Every camera is factory calibrated to a task with specific resolution at the selected working distance. The unique **One-Push-Calibration** ensures subpixel resolution and **3D resolution from 0.001 mm.**

Main target applications are ID tracking, object tracking, height measurement, object counting, assembly verification and more. Fast feature location and 3D image generation will support fast tracking framerates from up to 200 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



*FoodTech 3D Images
<--- Sprout Cutting*

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 or a USB3 cable.

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

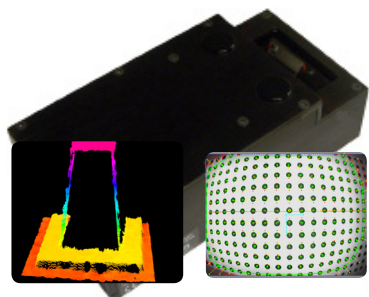
The Scorpion Stinger Camera Software runs on a PC. It is easy to control through an SDK from another application. This makes it easy to integrate into any PC based automation systems. The camera exposes everything you need to configure the optimal 3D Stereo Vision for your specific scene.

Using the Scorpion SMARTio digital-io multiple Venom cameras capture images in synch or is driven by the encoder signal of a conveyor.

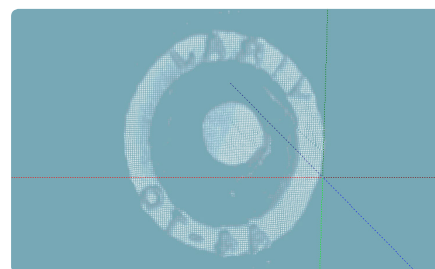
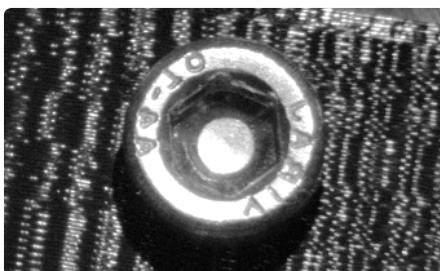
The core Scorpion Stinger Technology used to create the Scorpion 3D Venom camera is available for selected OEM partners of Tordivel AS.



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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.

DIMENSIONS

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

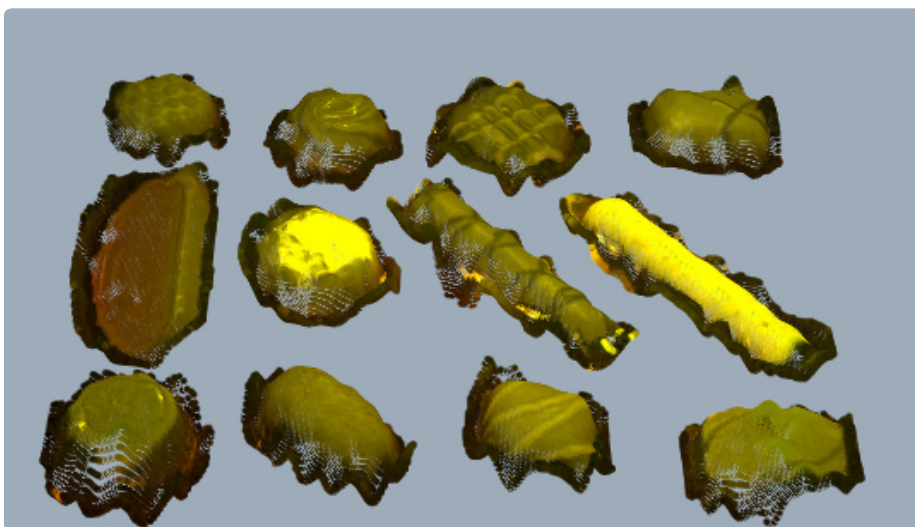
SCORPION 3D VENOM CAMERA VARIANTS

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



For more information:

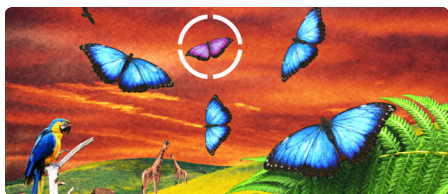
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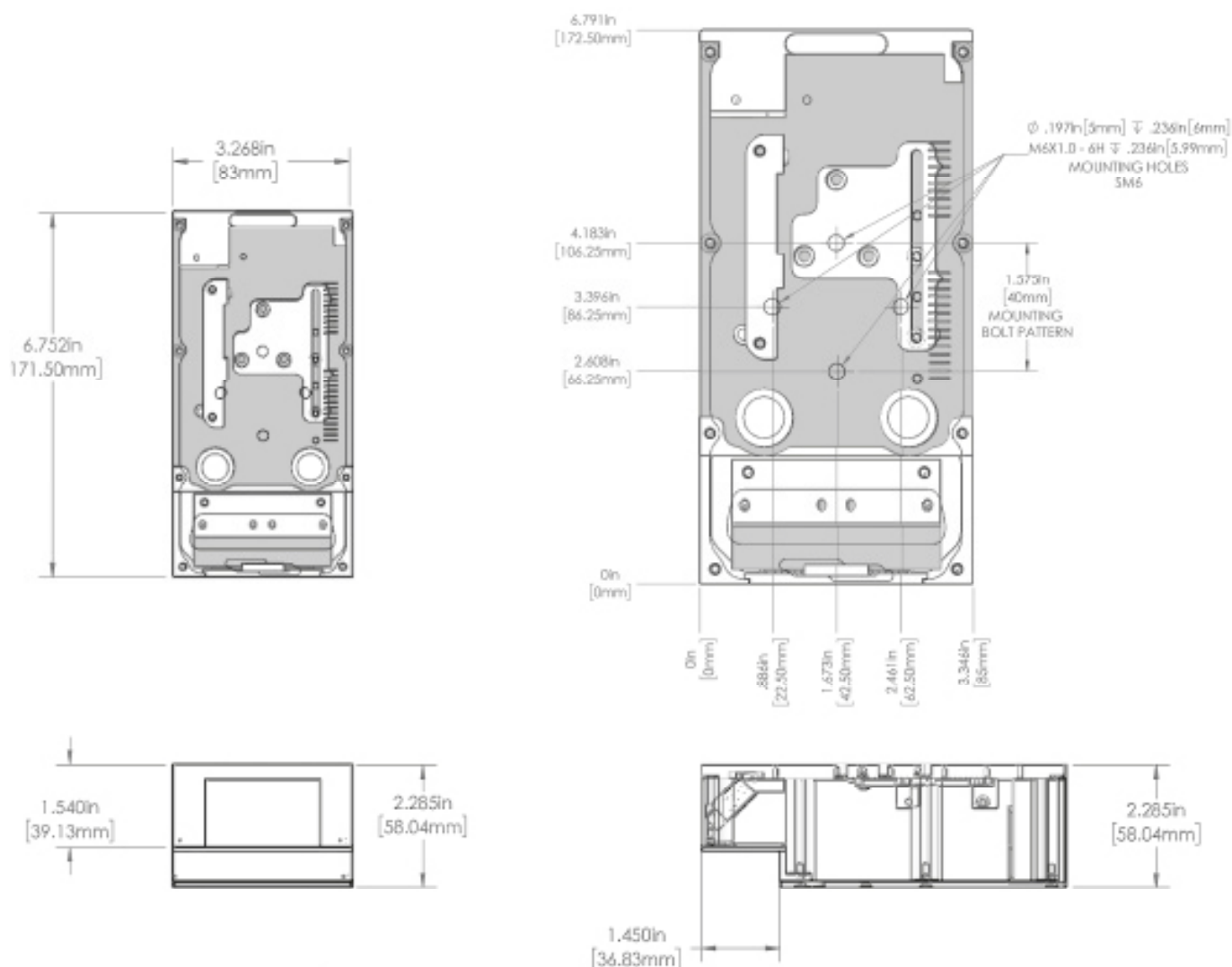
Scorpion Vision Software® is a registered trademark and Scorpion 3D Venom™ is a trademark of Tordivel AS.

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



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Scorpion 3D Venom Camera dimensions

SCORPION 3D VENOM CAMERA MODELS - OTHER MODELS UPON REQUEST

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	GIGE CAMERA AND POE SUPPORT

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	GIGE OR USB3 models are supported