



## SUBSEA 3D VISION



## The Kraken SeaVision<sup>™</sup> system is a revolutionary new take on subsea 3D laser imaging.

Designed to operate in a twin scanning configuration, with adjustable baseline, SeaVision can generate very high resolution 3D scans in full color. This is due to one of the unique features of SeaVision which uses a Tri-Color laser system to produce full color imagery. Each unit has a low-light underwater camera, a high power LED light, and steerable RGB-line lasers.

Innovative on-board processing techniques developed for Kraken's Synthetic Aperture Sonar uses internal motion compensation to produce a full 3D scan of 1.2 million points in 4 seconds, even on moving platforms. An external INS is not required and integral motion data can be exported to the vehicles control software.

An auto-calibration systems allows for flexible mounting options to fit a variety of platforms including small ROV's, Hovering Vehicles, and AUV's.

In field calibration can be accomplished quickly in air, on deck, making it ideal for fly away, or temporary applications.

No longer limited to black and white scans, SeaVision brings subsea laser imaging into vivid color.





SeaVision in Profiling Mode from an AUV



SeaVision in Scanning Mode mounted on an ROV

Range	FOV	Swath		Area	Resolution
(m)	(deg)	width (m)	height (m)	(m <sup>2</sup> )	(mm)
1	80° x 50°	1.68	0.93	1.57	< 1
2	80° x 50°	3.36	1.95	6.55	~1
3	80° x 50°	5.03	2.93	14.73	~2
4	80° x 50°	6.71	3.90	26.19	~4
5	80° x 50°	8.39	4.88	40.93	~6
6	80° x 50°	10.07	5.85	58.93	~8
7	80° x 50°	11.75	6.83	80.21	~10
8	80° x 50°	13.43	7.80	104.77	~12

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SeaVision Range vs Swath Table at 0.5 m baseline Performance subject to environmental conditions

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SeaVision <sup>™</sup> - Performance Characteristics				
Color camera	Quad VGA (1280 x 960)			
Field of view - camera / twin tube system	65° x 50° / 80° x 50°			
Steerable line lasers	Class 3R - Red / Green / Blue			
Integrated light	1300 lm LED			
3D scan rate (80° x 50°)	0.1 Hz - 1 Hz			
3D scan performance	300 K points / sec			
Scan resolution @ 2 m	0.1 - 3.0 mm			
Scan resolution @ 5 m	1.0 - 10.0 mm			
Working Range	0.5 - 8 m			
Values per point	X/Y/Z, RGB - Color, Quality est.			
Operational modes	Single scan / Continuous profiling			
Mounting Baseline	20 - 60 cm			
Ethernet	(2) GB / Daisy Chain			
Serial	(1) RS 485			
Onboard storage	Up to 2 TB			
Processing	Onboard, real time			
Real time capability	Live 3D scan preview / Live video			
Output formats	xyz, png, jpeg, mp4			
User Interfaces	Web based, Control / Data export			

SeaVision <sup>™</sup> - System Physical Characteristics				
Dimensions	460 mm x 113 mm			
Single tube weight 1000 m - air / water	7.0 kg / 2.0 kg			
Power supply	24 VDC			
Power draw per tube	20 W			
Max sea water temperature	40°C			
Min start up temperature	-5°C			
Calibration	In field, computer aided			



Representation of SeaVision Field of View in scanning configuration

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