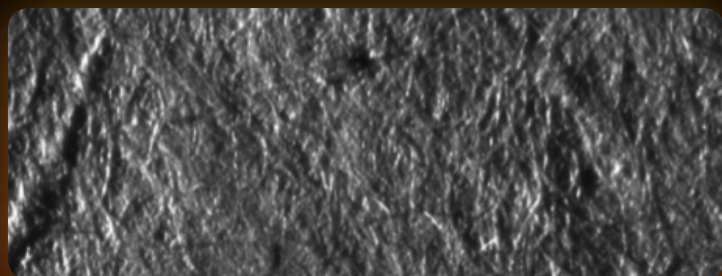
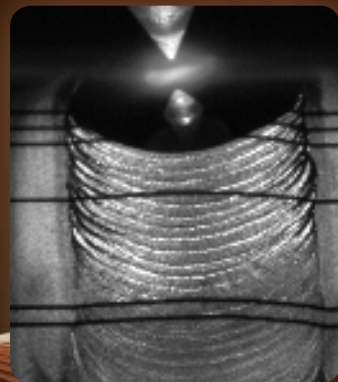
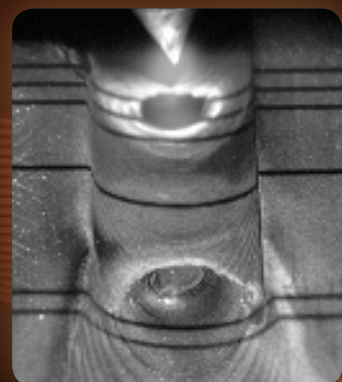


High light intensity penetrates through dense media. For example back-illumination reveals internal structures of wood.



Board surface is illuminated from a high angle. Same board can also be back-illuminated for density measurement.



CAVILUX Structured light combines image with optical triangulation – enables multiple (line) profiles with just one sensor.

Laser lighting for machine vision

Boost your machine vision solution with **high intensity** laser light that can "freeze the motion" even in the most demanding industrial applications.

Efficient lighting over **long** and safe **distances**.

High-speed quality control for machine vision.

Improved image quality for analyzing.

Application specific lighting through **customization**.

Shape the light as you need.

Create more benefits for your customers with **intelligent light**.



Want to see what you have missed?

Cavitar Ltd is an expert in illumination and materials processing lasers based on diode laser technology.

We provide versatile laser solutions for integrators of industrial monitoring systems and manufacturing machinery.

www.cavitar.com

CAVILUX®

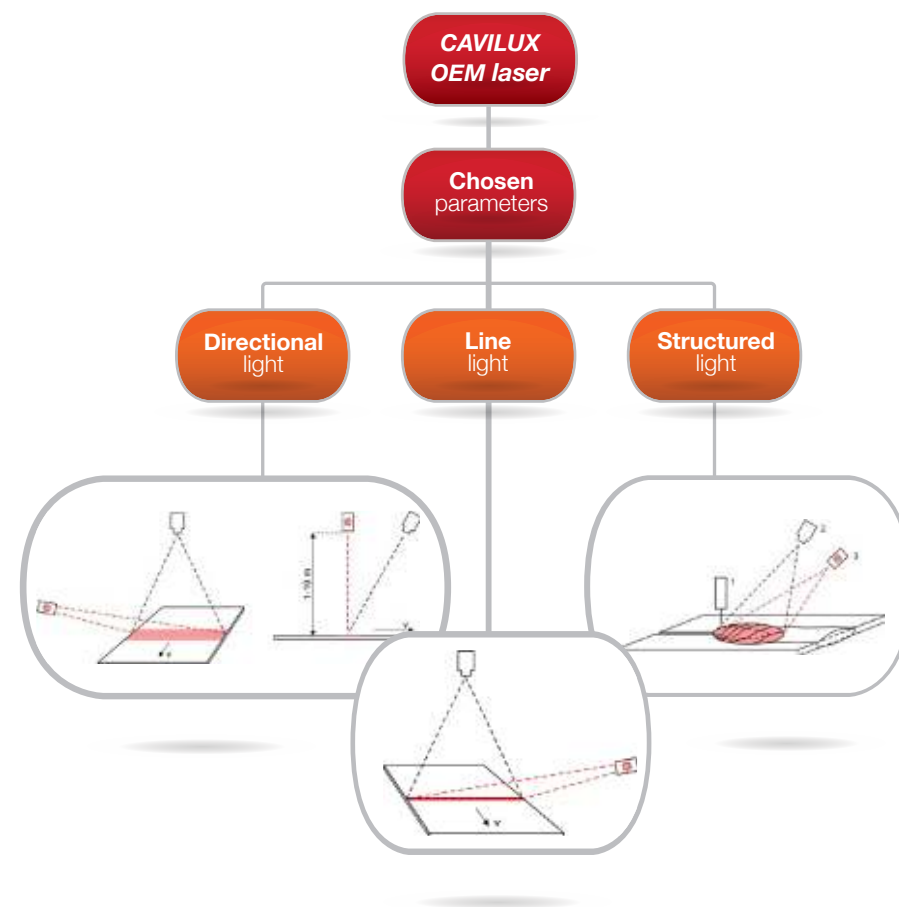
Laser lighting for machine vision

Intelligence in light

Laser lighting for machine vision

Unique features

- › **High brightness and intensity** of laser light (up to 100 W / mm²)
- › Immune to surrounding lighting conditions such as ambient or sunlight
- › **Energy efficient**, > 50 %
- › **Flexible** – easy realization of different lighting setups and illumination patterns
- › High performance lighting even over **long distances** of several meters – safe from industrial web disturbances
- › **Customizable** pulse lengths depending on application
- › Shortness of pulses eliminates motion blur – better and more **accurate images for analyzing**
- › See through heat and blinding brightness
- › Provides precise imaging even in **extremely fast processes** whether small or large object
- › Available in visible and invisible wavelengths
- › **Cold light** – does not heat up the illuminated object
- › **Plug and play** operation – easy synchronization between light source and camera
- › Eye-safe solutions possible
- › Designed for **24/7** industrial applications



- › Topography
- › Distant illumination
- › Web inspection – surface and density (e.g. paper, wood, foil, glass)
- › Geometry measurements of long targets
- › Surface reconstruction
- › Welding monitoring – profile measurement

Directional light

- › Accurate and intense lighting even from great distances of 10 m or more (light source can be high above or to the side from the disturbances of production line)
- › Fiber coupling provides variability
- › Different lighting setups and illuminated areas depending on the need of the application
- › For industrial applications of area scan cameras

Line light

- › Generation of line profiles with high intensity from safe distances of production line disturbances
- › High uniformity of light intensity throughout the illuminated area
- › Various line light widths starting from 1 mm
- › Line length up to several meters
- › E.g. for line scan camera applications or flow measurements

Structured light

- › Combines multiple laser triangulation with great benefits of CAVILUX lasers – ability to see through heat
- › Uniform lighting with dark patterns on it (combines image and e.g. multiple lines)
- › Different patterns can be created with just one light source
- › High resolution and contrast between dark and illuminated regions

CAVILUX® Laser lighting for machine vision

Parameter	Typical value	Options
Output light	200 W	adjustable, 0-500 W or more
Polarization	linear / nonpolarized	
Wavelength	640 nm or 808 nm	690 nm, 920 nm, 980 nm
Output type	fiber coupled illumination (easy access to process, versatile illumination profiles)	direct illumination (illuminated area 1 mm ² -10 m ² , eg. rectangular or line)
Frequency	30 Hz	up to 100.000 Hz (e.g. line scan cameras)
Pulse duration	10 ns ...10 µs	continuous operation (cw) with active cooling
Duty cycle	0,1% passive cooling	0,1-2 % - improved cooling, 1 % - cw, active cooling
Sync in	5 V TTL signal	LVDS signal
Operating voltage	12 V DC	24 V DC
Dimensions (LxWxH)	e.g. 100 x 50 x 30 mm	different casings possible