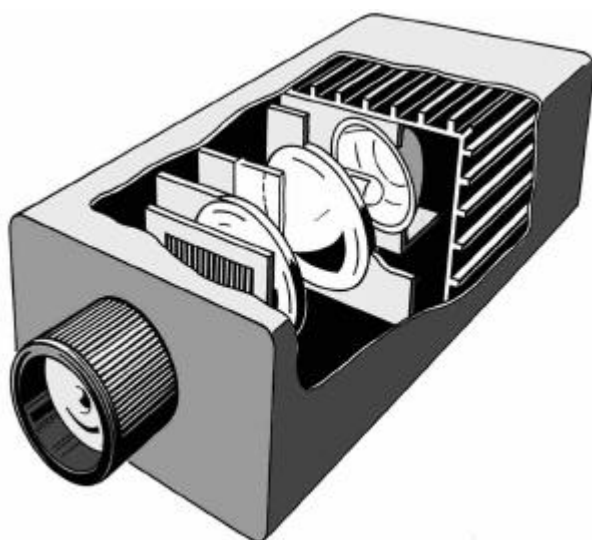


Lineprojector LCD-640

Programmable Lineprojector for Measurement of 3D-Shape

The lineprojector LCD-640 provides 640 programmable liquid crystal stripes to illuminate objects for optical measurement of their shape.

Due to the high precision of the stripes, the fast switching time, the absence of moving mechanical parts and its stable construction it is well suited for applications in industrial production lines and medical in vivo measurements.



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Using the so called 'Coded Light Approach (CLA)' which is a very stable and time efficient method, only 12 images have to be taken to identify each projected stripe on the object. We use additionally the 'Phaseshifting Algorithm' to improve accuracy. This takes 4 further images. So objects have to be stable only 0,5 seconds to grab the images. After 2 seconds of calculation time x-, y- and z- values for each pixel of standard or high resolution CCD-cameras are available in memory using standard PC.

Options

- ? SWITCH: Dimmable lamp brightness: continuous power of 150 W may be enhanced up to 250 W for limited time.
- ? SINUS: Optical low-pass-filter, tunable by moderate turning (similar to linear polarization filters).
- ? ANALOG: firmware serves for programmable brightness of each line.

<u>Applications</u>	<u>Features</u>
<ul style="list-style-type: none"> ? Quality Control ? Identifying of parts ? Robotics and Handling ? Digitizing Models ? Rapid Prototyping ? <i>Medical Applications</i> 	<ul style="list-style-type: none"> ? Shielded Lenses for industrial applications ? Lines are switchable quickly: in video-real-time ? High resolution: 640 projected solid lines (similar to 640 x infinite pixels) ? Mirror tiltable for different size of scenes ? High lamp power (max. 250 W) ? RAM for 100 binary plus optionally 16 gray-level line-images.

Technical Specifications

Lineprojector LCD-640

Amount of lines:	640
Size of LCD-projection window:	57,6 x 57,6 mm
Width of lines in LCD:	0,09 mm
Abundance factor of lines in LCD:	94% (Option CROSS: 89%)
Switching time for LCD-lines:	14 ms
Permanently stored line-images:	100
Storable binary-line images:	16
<u>Default Projection Lens:</u>	5,6 / 150 mm
Measuring area : max. (limited only by power of light):	ca. 1000 x 1000 mm
min. (smaller areas on request):	100x100mm
Distance of principal points HH':	-3,3 mm
Distance LCD to front of cover:	108 mm
Further lenses on request	
<u>Mechanical Data</u>	
Weight:	ca. 4500 g
Size (L x W x H):	ca. 520 x 165 x 140 mm
Electrical Data	
Lamp:	Halogen: 24V/150W / with Option SWITCH: 24V/250W
Power Microcontroller:	DC: 5,8 Volt / 300 mA
Interface:	RS 232
External signals:	TTL, opto-decoupled
RS-232 Interface	
Baudrate:	Programmable from 1200 to 19200 Baud
Data bits:	8
Parity:	odd
Account of Stopbits:	1