

## 2D / 3D laser projector for a variety of applications

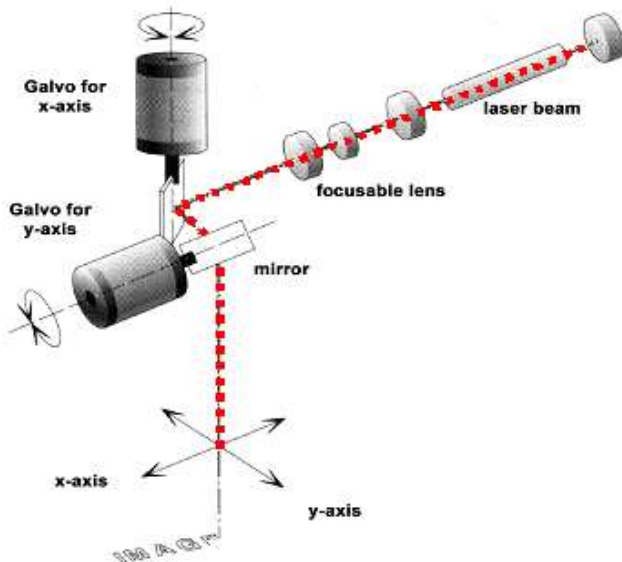
### LP-HFD



Laser projectors were developed as optical systems. This allows working without templates in many production processes. It is projected directly onto the work piece and displays how the material must be positioned or mounted. Thus employees are optically guided through the production process.

#### The Core

In General, a laser projector is built from a point laser source, a collimator lens and a deflection unit consisting of two galvanometer motors with mirrors. Figure 1 shows schematic of the structure:



The galvanometer motors are high-precision components, which have a repeatability of 8 micro radians - which corresponds to a difference of just 8mm at a distance of 1,000,000mm. Either a modulated red diode laser with 635nm or a modulated green DPSS laser with 532nm is used.



## Factory calibration guarantees the highest accuracy.

The laser projector production process consists of more other mechanical parts. To compensate the tolerances of the projector, each individual Z-LASER projector has to pass through the "factory calibration" on our high-precision calibration wall: this calibration wall has a total area of 6,000 x 6,000mm with a grid spacing of 100 mm in X and Y direction. . The projector is mounted vertically with a fixed distance of 3,576 mm to the wall. During the calibration process, each grid point is passed individually and the set and coordinate is compared to each other. The individual correction values are stored in a matrix. This calibration ensures a faultless result as long as the process, as long as the process is not performed for a too long period of time and the temperature remains constant. The calibration grid is the basis for the coordinate system of the projector:

- X-axis to the right
- Y-axis to the left
- Z-axis towards the projector

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## Features HFD

Fast and stable projection with high repetition rate  
Highest accuracy of projection  
Optimised for 3D  
Wide optical angle (80° x 80°) allows bigger working sites  
Optional with red or green laser source  
Multi-projection system for huge and complex projections  
Serial or Ethernet data communication

## Your Advantages

Material and time saving through optimised working process  
Instant optical quality control  
Increase in productivity: No more use of patterns or rulers!  
Projection of any form and permanent switching figures with high precision display and quality  
Temperature stabilised diode laser  
Modulatable laser source, i.e. no visible interrupting connection lines  
Display of CAD data on a scale of 1:1 !  
Easy handling with comprehensive software  
CE-conformity  
Laser class 2M

## Included in delivery

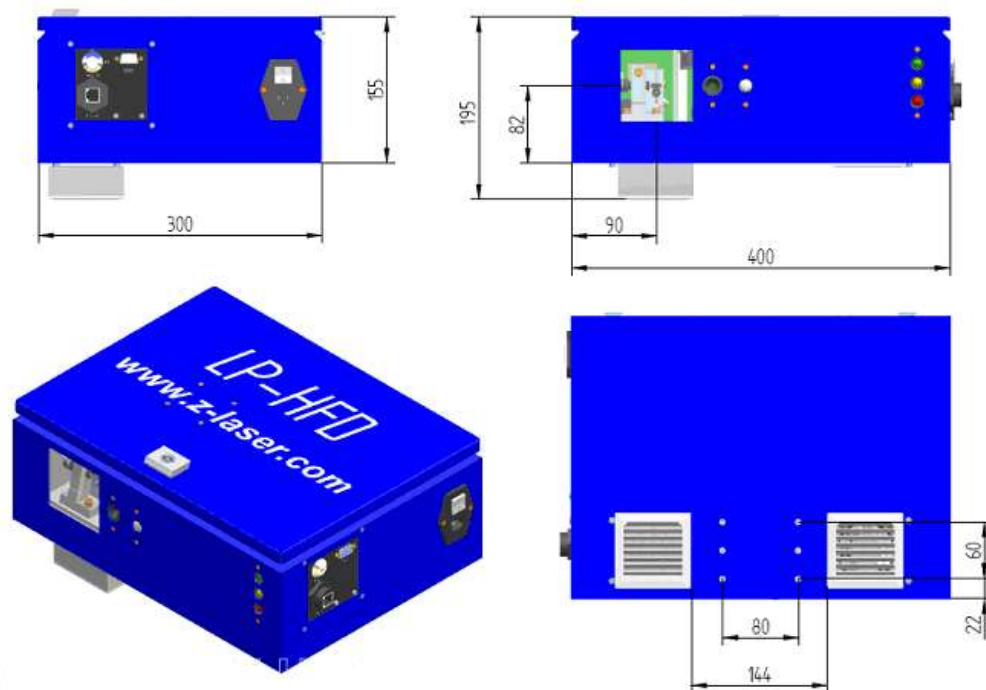
2m connection line with EU-plug  
4 glass reflectors for the drift compensation and referencing the laser systems  
Installation CD with software LPM  
User manual on CD

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## Technical drawing:



Unit 6 Sandown Centre. White Horse Business Park. BA14 0XD. Trowbridge. United Kingdom  
Tel: +44 (0)1225 751 542 email: [sales@scitec.uk.com](mailto:sales@scitec.uk.com) web: [www.scitec.uk.com](http://www.scitec.uk.com)



### Housing

Dimensions (mm)	400 x 300 x 155 (195 including fan)
Protection class	IP 40
Weight	10 kg

### Voltage

Input voltage	95/240 VAC, 50-60Hz
Power consumption	Standby: < 55W In operate: < 170W

### Data transfer

Type of connection	Ethernet / Serial
Serial (without converter)	RS232 / V24 (10m)
Serial (with converter)	optical fibre / RS485
Ethernet	Ethernet TP, 100 Base TX, cable or WLAN
Software	LPM
Format of graphics without LPM	HPGL

### Laser



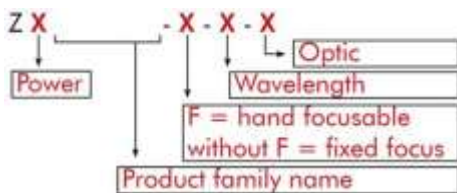
Unit 6 Sandown Centre. White Horse Business Park. BA14 0XD. Trowbridge. United Kingdom  
 Tel: +44 (0)1225 751 542 email: [sales@scitec.uk.com](mailto:sales@scitec.uk.com) web: [www.scitec.uk.com](http://www.scitec.uk.com)

red	modulated diode laser red, 635nm ± 5nm
green	modulated DPSS laser green, 532nm
Laser power	10/20mW
Laser class	2M, TÜV certified

Projection	
Accuracy of projection (typical) passive cooling	0,5mm/m mounting height (at 23°C, optical angle 70° and 0° slope)
Optical angle/axis	max. 80° x 80°
Refresh rate	50Hz (Reference Test image quad.plt)
Optical resolution	1/812 calculative (at 80° optical angle)
Projection	polygons

Conditions for installation	
Working temperature	min. 5°C / 41° F
Passive cooling	max. 40°C / 104°F
Active cooling (optional)	max. 45°C / 110°F
Humidity	< 80% relative, non-condensing

**Order code:**



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