

DFS30 3D Scan System

Focusing on high-end industrial laser applications



DFS30 System Key Advantages:

- ▶ Extremely low temperature drift - scanner (over 8 hours long-term offset⁽³⁾ drift $\leq 80 \mu\text{rad}$)
- ▶ Dynamic focusing module with extremely high resolution $\leq 0.3 \mu\text{m}$
- ▶ Extremely high speed - scanner (tracking error $\leq 0.4\text{ms}$)

Typical Applications:

The DFS30 products incorporate dynamic focusing techniques, offering the smallest focal spot in accordance with a larger processing field and processing ability on 3D applications. DFS30 products are highly suitable for textiles, paper, leather, plastic web, automotive, metalworking and packaging industries, where larger processing area, smallest spot diameters, and 3D applications are crucial.

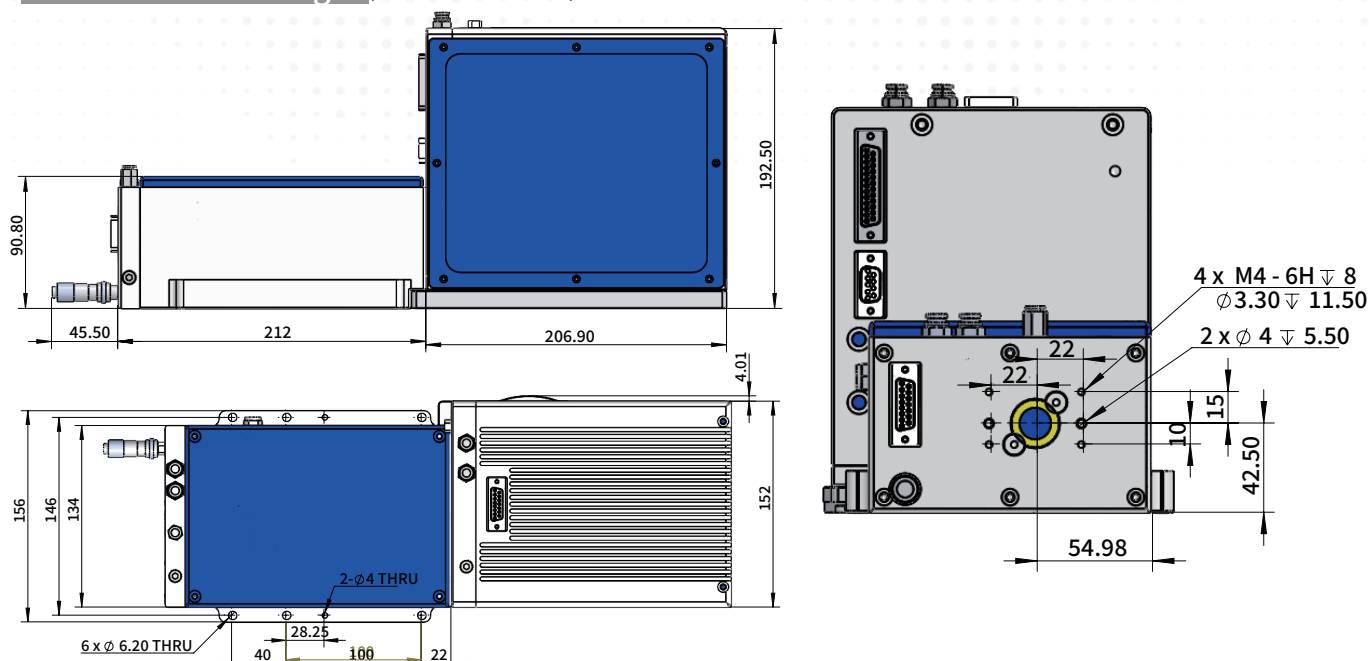
The DFS30 exhibits extremely high dynamic-axis resolution, exceptional focal spot uniformity and great dynamic performance, high precision, low temperature drift and excellent long-term stability.

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Mechanical Drawings (Dimensions in mm)



Specifications DFS30-1.064-WA

Scan filed (mm x mm)	400 x 400	500 x 500	600 x 600
Wavelength (nm)	1064		
Entrance Aperture (mm)	15	15	15
Working distance (mm)	590	690	820
Average spot size $1/e^2$ (μm)	37.2	44.7	56.1
Max. laser power CW (W)	2000	2000	2000
for 50% duty cycle (W)	4000	4000	4000
Focus range in z direction (mm)	± 50 mm	± 60 mm	± 90 mm

Specifications DFS30-10.6-W

Scan filed (mm x mm)	500 x 500	700 x 700	1000 x 1000
Wavelength (nm)	10600		
Entrance Aperture (mm)	12	12	12
Working distance (mm)	661	916	1400
Average spot size $1/e^2$ (μm)	46	71	110
Max. laser power CW (W)	1000	1000	1000
for 50% duty cycle (W)	2000	2000	2000

Note:

(1) Working distance: distance from the lower end of the beam exit side of the scan head to the surface of the work plane.

(2) $M^2 = 1$

(3) Long-term temperature drift is given under an ambient temperature environment of 25°C, and a working load under 500W. Temperature drift testing with high laser power is strictly prohibited. High laser power could induce thermal deformations in both the optical and mechanical systems, making it impossible to differentiate whether the drift is originating from galvanometer scanner itself or due to deformations in the optical and mechanical systems.

(4) The long-term thermal drift test shall be carried out under a constant ambient temperature of approximately 25 °C, with the laser power kept below 500 W. High laser power shall not be adopted for thermal drift testing. Under high laser power, thermal distortion will occur in both the optical system and mechanical system. Consequently, it cannot be determined whether the measured drift originates from the inherent drift of the galvo scanner or from thermal deformation of the optical and mechanical systems.

(5) Appropriate delay parameters must be configured for normal operation of the galvo scanner. Failure to do so may result in abnormal operation of the galvo motor and even irreversible damage to the motor! Please contact PSI engineers regarding relevant parameter configuration issues.