3D LARGE FIELD DYNAMICS FOCUSING SYSTEM

Features:

- The combination of galvanometer and voice coil motor is used to realize the fast scanning of 3D curved surface and large field.
- Highly integration system and easy to integration and operation
- Connected with computer through TCP/IP communication protocol, multiple scanner systems can be controlled by single one controller computer simultaneously.
- When design the optical path, considering the focusing effect under the different format, ensure the minimum laser spot within the working range in order to focus the energy.

INDUSTRY APPLICATIONS

The combination of galvanometer and voice coil motor is used to realize the fast scanning of 3D curved surface and large field .It is widely used in large field laser precision marking ,laser relief ,laser deep engraving ,laser cutting ,laser welding and other high-end processing application .

CO2&UV&IR 3D system

Technical Parameters:

	CO_2	Ultraviolet	IR
Scan Angle (°)	±11	±11	±11
System emendation orientation accuracy	≤0.1mm		
Repeatability (μrad)	2	5	2
Max.Gain Drift (ppm/k)	80	8	80
Max.Offset Drift(μRad/k)	15	15	15
Long-term drift over 8h (mrad)	≤0.3	≤0.1	≤0.3
Tracking error (ms)	≤0.70	≤0.45	≤0.30/≤0.45/≤0.7
Wavelength(nm)	10600	355	1064
Incident spot diameter（mm）	15	6	7/10
Aperture Size (mm)	30	20	14/20/30
Maximum Laser Power Cw(W/cm²)	1000	300	1500

Note :①Calibration accuracy at processing field ≤800mm*800mm
②All angles are in optical degrees

CONFIGURATION INSTANCE OF CO_2 LASER

Field Size (mm*mm*mm)	1/e²The Smallest Spot Diameter1/e²(μm)	Working Distance (mm)
100*100*0	181	96.5
250*250*10	304	241.5
500*500*150	568.2	550.5
750*750*300	832	860.5
1000*1000*500	1096	1169.5
1250*1250*700	1360	1478.5
1500*1500*900	1625	1788.5
2000*2000*1400	2145	2407.5

CONFIGURATION INSTANCE OF UV LASER

Field Size (mm*mm*mm)	1/e²The Smallest Spot Diameter1/e²(μm)	Working Distance (mm)
200*200*30	11	212
300*300*50	15	309
500*500*100	26	556
700*700*150	34	804
1000*1000*240	46	1175
1200*1200*320	55	1423

CONFIGURATION INSTANCE OF IR LASER (14mm)

Field Size (mm*mm*mm)	1/e²The Smallest Spot Diameter1/e²(μm)	Working Distance (mm)
200*200*40	45.2	177.4
250*250*60	52.1	239.3
300*300*80	60.7	301.2
350*350*100	70	363.0
400*400*120	79.3	425.0

CONFIGURATION INSTANCE OF IR LASER (20mm)

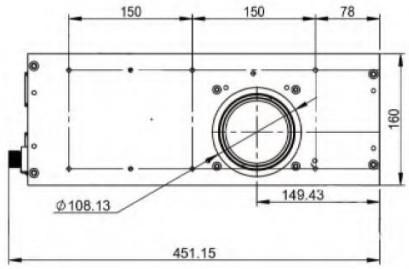
Field Size (mm*mm*mm)	1/e²The Smallest Spot Diameter1/e²(μm)	Working Distance (mm)
200*200*30	25.75	184.7
400*400*70	49	432.2
500*500*100	65	618.8
600*600*120	77	679.7
700*700*150	89	866.3
800*800*180	101	927.2
900*900*220	113	1113.8
1000*1000*240	125	1174.7
1200*1200*320	148.5	1422.2

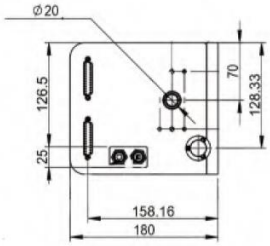
CONFIGURATION INSTANCE OF IR LASER (30mm)

Field Size (mm*mm*mm)	The Smallest Spot Diameter 1/e² (μm)	Working Distance (mm)
800*800*50	70	921.6
1000*1000*200	84	1169.1
1200*1200*450	100	1416.6
1300*1300*550	108	1540.3
1400*1400*700	116	1664.1
1500*1500*850	124	1787.9

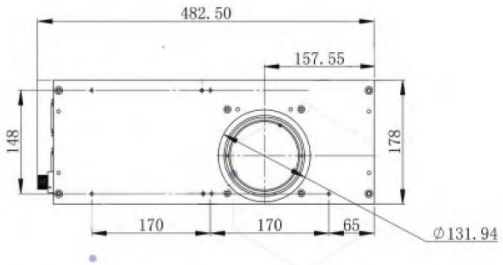
TECHNICAL DRAWING

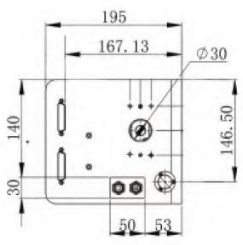
紫外/20mm 红外
Ultraviolet/20mm IR





CO2/30mm 红外
CO2/30mm IR





3D LARGE FORMAT METAL PRINTING SYSTEM

TECHNICAL PARAMETERS

GALVANOMETER PARAMETERS	IR
Scan Angle (°)	±10
Position Resolution	2^{23}
Repeatability (μrad)	1
Max.Gain Drift (ppm/k)	8
Max.Offset Drift(urad/k)	15
Long-term drift over 8h (mrad)	≤0.08
Tracking error (ms)	≤0.70
Gain Error (mrad)	＜5
Zero Offset (mrad)	＜5
Wavelength(nm)	1064
Aperture Size (mm)	30
Maximum Laser Power CW (W/cm^2)	3000

OPTICAL PARAMETERS						
Working range of single galvanometer (mm*mm)	300*300	350*350	400*400	450*450	500*500	600*600
Overlap area of two galvanometers (mm*mm)	250*250	300*300	350*350	400*400	450*450	550*550
Working height (Y mirror from bottom) (mm)	412.1	480.8	549.5	618.2	686.9	824.2
Minimum spot diameter of working face(1/e2) μm ①	51.4-57.2	59.2-70	66.9-74.7	74.7-83.5	82.5-92.2	98-109.6
Minimum spot diameter of working face(1/e2) μm ②	30	34.4	39.2	43.6	48	57.6
Minimum spot diameter of working face(1/e2) μm ③	40.4	46.4	52.8	58.4	64.8	76.8

Note:① Spot calculated with 20μm core diameter of fiber
② Calculated with 10mm diameter laser beam
③Calculated with 7.5mm diameter laser beam

TECHNICAL DRAWING