HYPERION-G

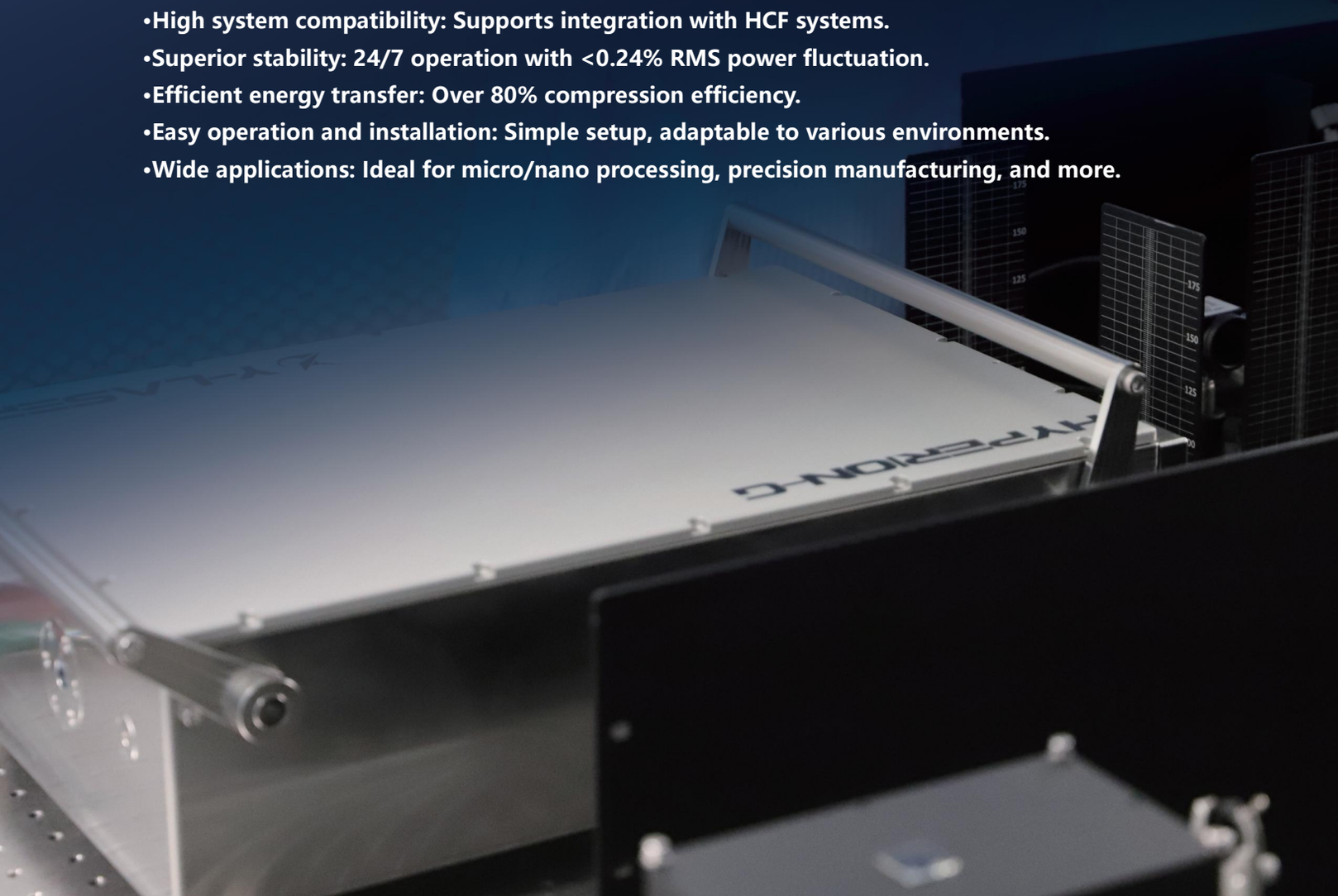
High-energy Nonlinear Pulse Compressor

The HYPERION-G series is a pulse compressor using nonlinear technology to compress input laser pulses through spectral broadening. It features advanced cavity design and high-quality femtosecond optics for minimal transmission loss. The built-in monitoring system ensures stable pulse output by checking the spot quality in real time.

This pulse compressor offers excellent interference resistance, long lifespan, and can provide 5-10 times pulse compression, making it ideal for high-power, high-repetition-rate Yb femtosecond lasers.

Product Features:

- **Excellent pulse compression: Pulse width under 50fs for ultrafast laser applications.**
- **High system compatibility: Supports integration with HCF systems.**
- **Superior stability: 24/7 operation with <0.24% RMS power fluctuation.**
- **Efficient energy transfer: Over 80% compression efficiency.**
- **Easy operation and installation: Simple setup, adaptable to various environments.**
- **Wide applications: Ideal for micro/nano processing, precision manufacturing, and more.**



High-Energy Nonlinear Pulse Compressor

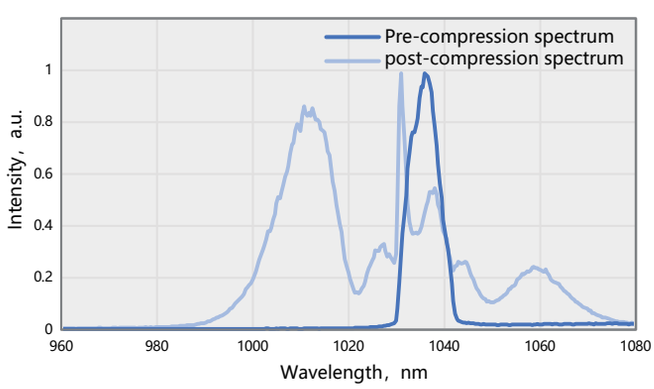
Application Areas

- Surface Micro-Nano Structures
- Synchrotron Locking and Synchronization
- Laser-Induced Photopolymerization
- Precision Part Cutting
- Polymer/Metal Polishing
- Milling of Complex 3D Structures
- Periodic Surface Structures
- Surface Nano-Structuring

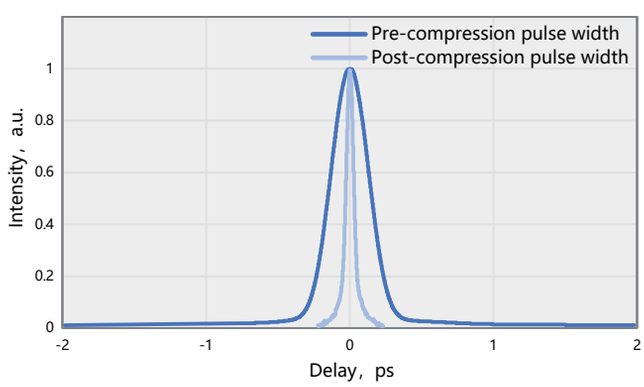
Parameter Specifications

Parameter	HYPERION-G
Incident pulse width	150fs-1ps
Incident pulse energy	20 - 400μJ
Incident laser central wavelength	1030 ± 10nm
Maximum compatible power	80W
Typical compression ratio	5 - 10
Compressor efficiency	>90%
Typical output pulse width	<50fs
Compatibility	Can be cascaded with HCF system to output few-cycle pulses
Dimensions (L×W×H)	490 x 353 x 135 mm
Weight (kg)	60kg
Remaining weight (kg)	24kg (Water-cooled machine)
Power supply requirements	AC 220V/10A
Power supply requirements for the water-cooled machine	220V/0.6-5.6A/10.2kW (CWUP - 10AI)

Note:
Customization is available based on customer requirements for wavelength, pulse width, and other parameters. If you need more detailed information or have any questions about this MPC pulse compressor, please feel free to contact our technical support team.



Typical spectrum of HYPERION-G



Typical pulse duration of HYPERION-G:39.4fs
Incident laser: 270.3fs/200uJ/40W/200kHz/1029.9nm

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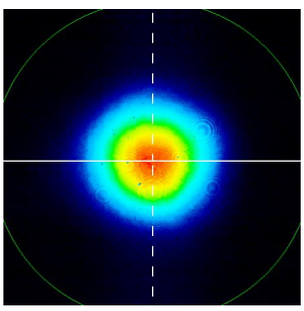
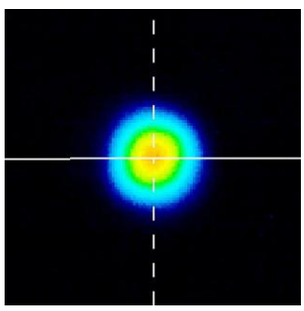
Beam Characteristics

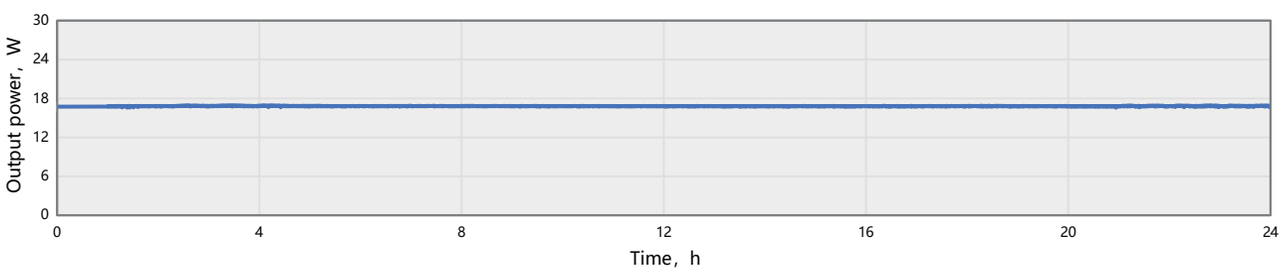


Typical near-field beam profile

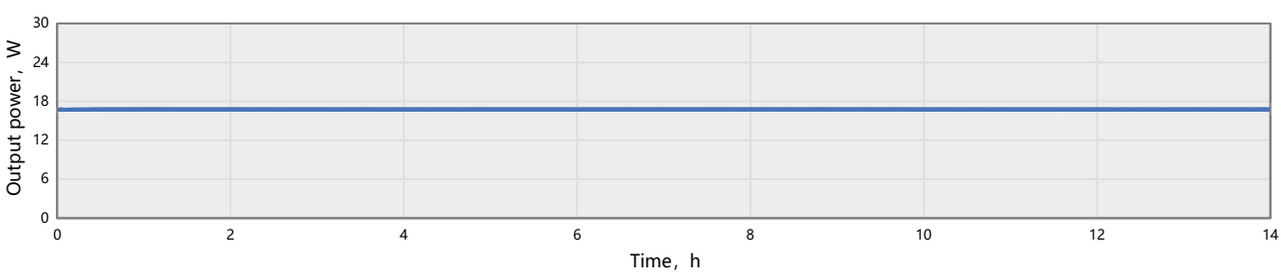


Typical far-field beam profile

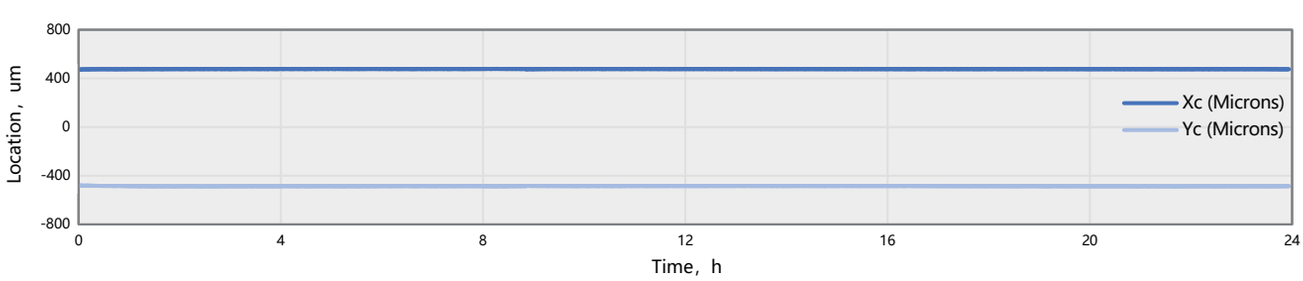
Stability Measurement



24-hour power stability of HYPERION-G RMS=0.1733%
Incident laser: 270.3fs/200uJ/40W/200kHz/1029.9nm



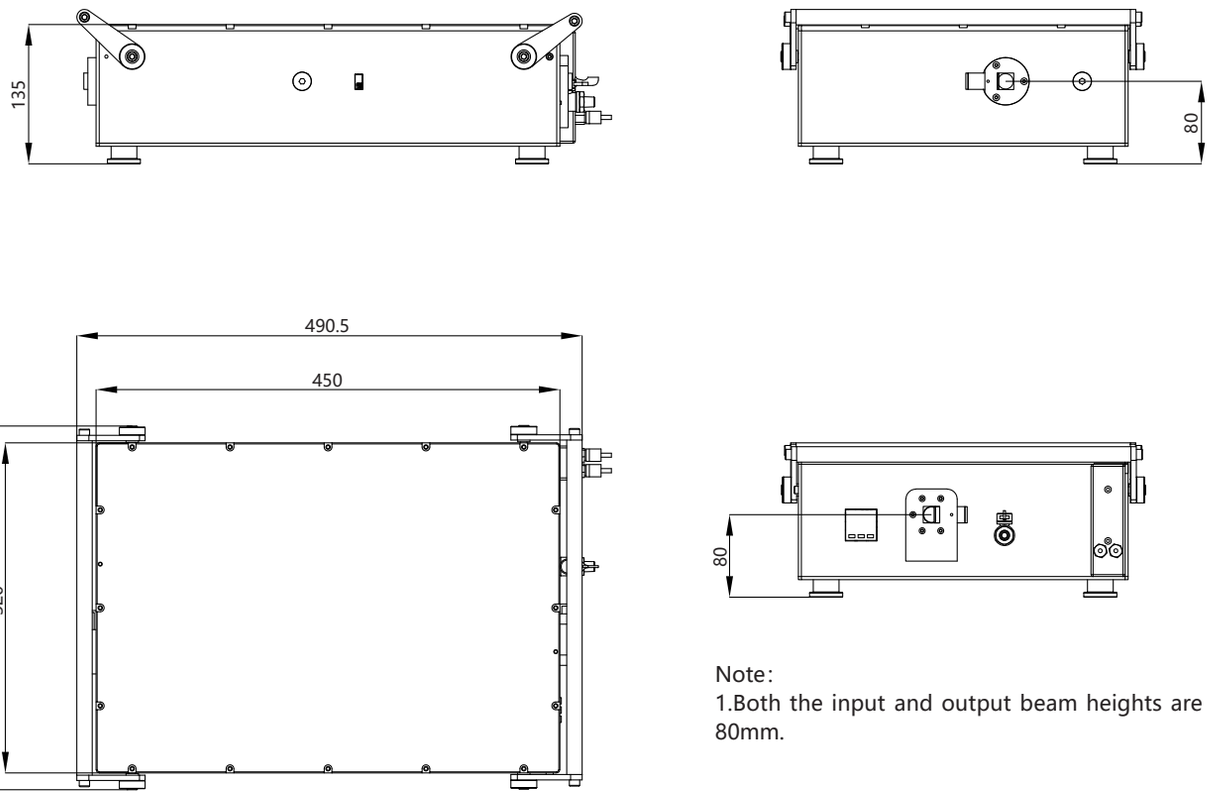
14-hour power stability of HYPERION-G-HE RMS=0.0444%
Incident laser :318fs/400uJ/50kHz@HELIOS-20W



24-hour beam pointing stability of HYPERION-G
Incident laser: 270.3fs/200uJ/40W/200kHz/1029.9nm

High-Energy Nonlinear Pulse Compressor

Drawings



Note:
1.Both the input and output beam heights are 80mm.

HYPERION-G outline drawing