# HYPERION-G-HE

## High-energy Nonlinear Pulse Compressor

**The HYPERION-G-HE series is a high-performance nonlinear pulse compressor designed for high single-pulse energy applications. It compresses pulse duration using spectral broadening, improving time resolution and overall laser performance. Compatible with up to 2mJ single-pulse energy, especially for Yb laser systems, it offers precise pulse compression.**

**With high-quality femtosecond optics and an innovative cavity design, it ensures minimal loss and optimal efficiency. Its automatic monitoring system tracks pulse stability for reliable output. The HYPERION-G-HE is durable, interference-resistant, and suitable for both research and industrial applications, enhancing laser system performance for precision manufacturing and ultrafast optics.**

## Product Features:

- **Maximum single-pulse energy of 2mJ to meet high-energy laser requirements**
- **Pulse compression improves time resolution by 5-10 times**
- **Spectral broadening technology effectively compresses pulse width**
- **High-quality optical components and innovative cavity design reduce transmission loss**
- **Real-time monitoring system accurately tracks laser pulse spot quality**
- **Strong interference resistance to adapt to complex experimental environments**
- **Long lifespan design suitable for high-intensity, long-term use**
- **Lightweight structure ensures device stability and easy operation**

# High-Energy Nonlinear Pulse Compressor

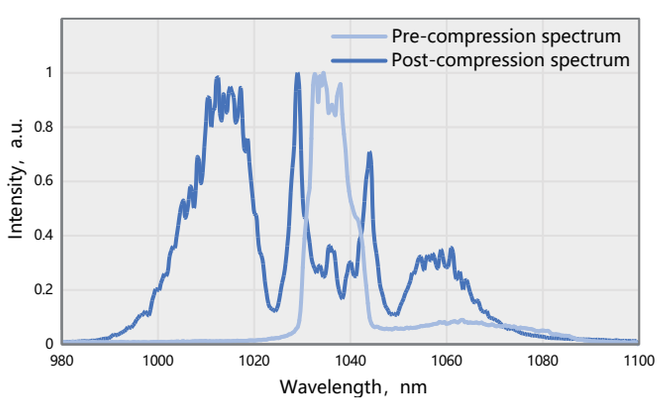
## Application Areas

- Ultrafast Laser Processing
- Materials Science Research
- Ultrafast Optics and Nonlinear OPptics Experiments
- Time-Resolved spectroscopy
- Laser and Plasma Physics Research
- high-Energy Physics Experiments
- Laser-Induced Fluorescence (LIF) Analysis

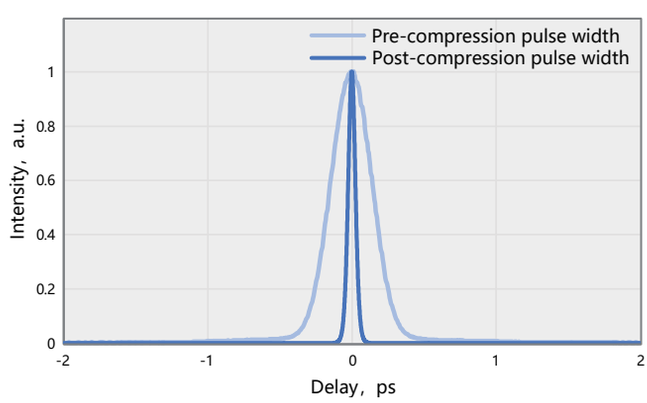

## Parameter Specifications

| Parameter | HYPERION-G-HE |
|---|---|
| Incident pulse width | 150fs - 1ps |
| Incident pulse energy | 400 - 2000μJ |
| 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) | 860 x 525 x 187 mm (LxWxH) |
| Weight (kg) | 54kg |
| 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.

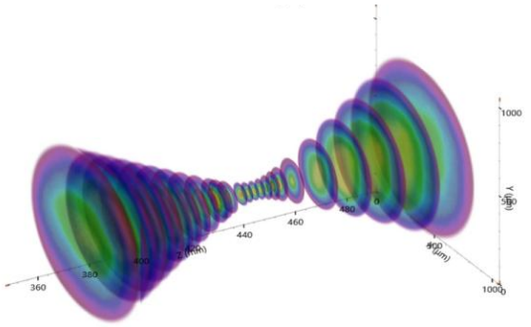


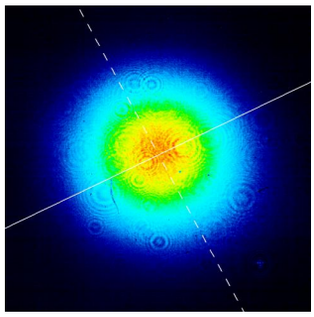

Typical spectrum of HYPERION-G-HE



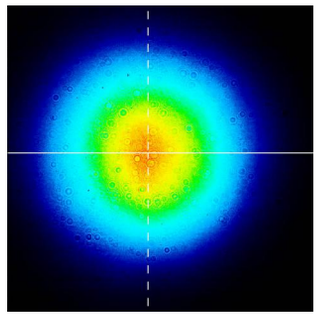

Typical pulse duration of HYPERION-G-HE(37.4fs)
Incident laser: 2mJ/10kHz/234fs

# High-Energy Nonlinear Pulse Compressor

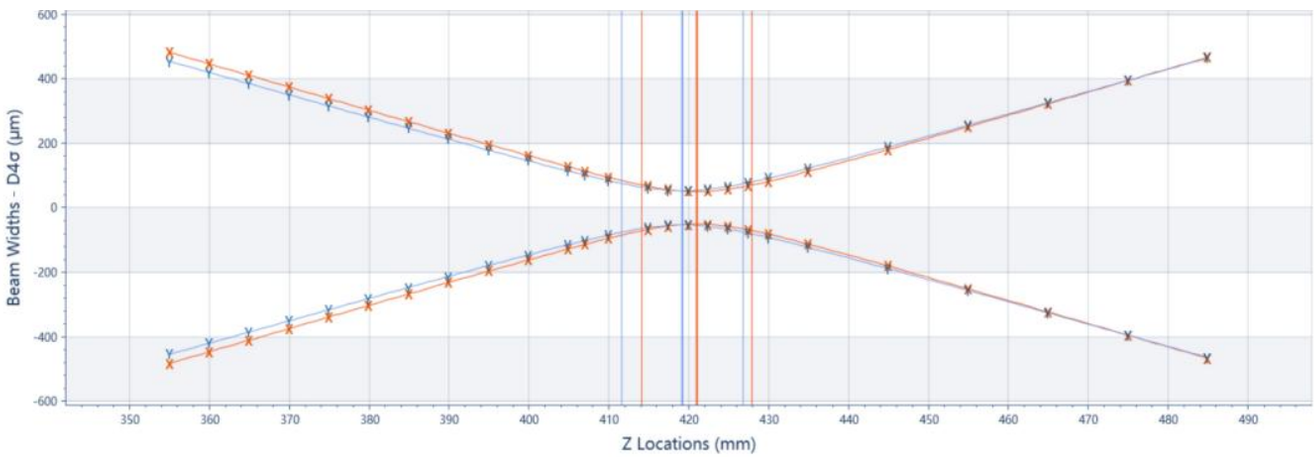




Input Beam Spot

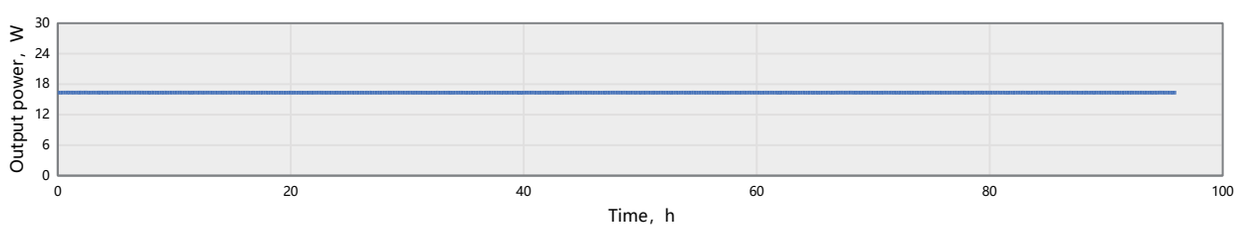


Output Beam Spot

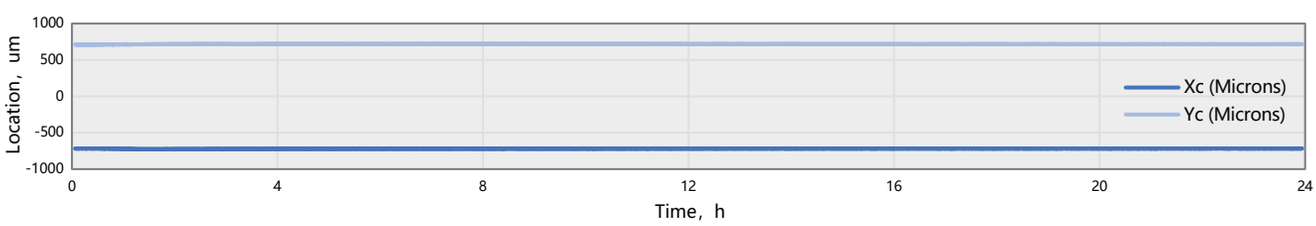



HYPERION-G-HE output $M^2$ < 1.2

## Stability Measurement



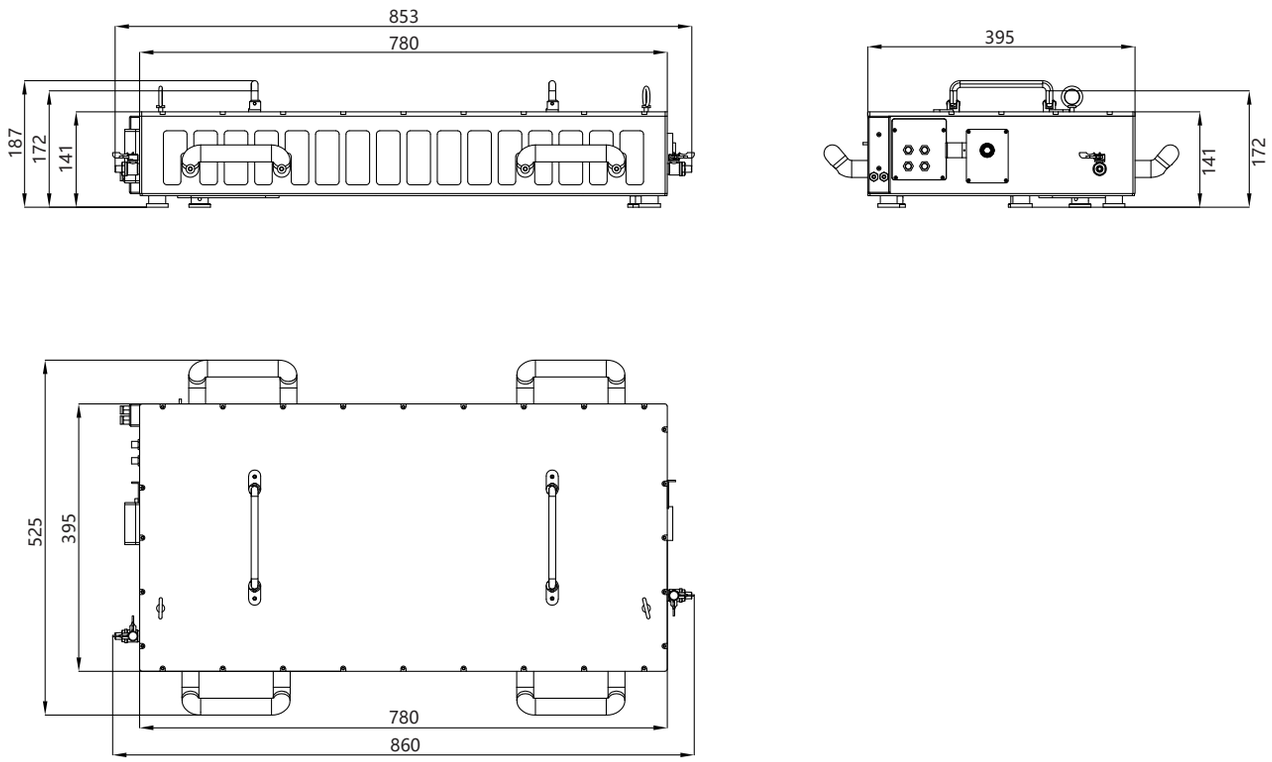

96-hour power stability ofHYPERION-G-HE RMS=0.378%
(HELIOS-20W-HE 2mJ/10kHz/234fs)




24-hour beam pointing stability of HYPERION-G-HE

# High-Energy Nonlinear Pulse Compressor

## Drawings




HYPERION-G-HE outline drawing