영문 규격서
Commodity Description

종목 번호 Item No.	관세분류 번호 HSK No.	정부물품분류번호(8자리) Korean Government Commodity Classification Code(eight-digit)	품 명 Description	단 위 Unit	수 량 Q'ty
1	9013200000	41115307	고비선형 광섬유 증폭기 (Highly nonlinear fiber amplifier)	set	1

Ⅰ. End-user's Use

This system is used to develop a high-precision laser module for semiconductor process gas monitoring. It provides a stable reference optical frequency for Raman spectroscopy accuracy. Based on a 1550nm femtosecond laser, it amplifies output and generates a supercontinuum (1000nm to >2100nm) via High-Nonlinear Fiber (HNLF). The all-fiber, Polarization-Maintaining design ensures high stability and full compatibility with existing systems. It serves as a high-power source for precision spectroscopy, CW laser stabilization, and establishing standard spectral databases.

Ⅱ. Configurations of Goods

1. Main Module (Wavelength Extension & Amplifier): 1 set
: Integrated high-power Erbium-doped fiber amplifier (EDFA) and nonlinear spectral broadening stage.
2. System Interface & Cable Kit: 1 set
: High-speed data communication cables and DC power interface for mainframe synchronization.
3. Control & Operation Software (License/Integration): 1 set
: Embedded control firmware and integrated GUI license for real-time parameter monitoring.

Ⅲ. Performance & Specification

1. Operation Principle: High-power femtosecond pulse amplification and non-linear spectral broadening.
2. Input Wavelength: 1550 nm-1570 nm (Optimized for femtosecond pulse mode).
3. Output Spectral Range: 1050 nm-2000 nm (Near-infrared supercontinuum generation).
4. Total Average Output Power: ≥ 100 mW (at the output port).
5. Optical Architecture: All-fiber design based on Polarization-Maintaining (PM) fiber for environmental and phase stability.
6. System Integration: Must be fully compatible and integrated with the pre-installed light source (Optical Frequency Comb, Menlo Systems FC1500).
7. Power Supply System: Must support DC power sharing and synchronization with the existing mainframe to ensure low-noise operation and eliminate ground loops.
8. Control Interface: Supports remote control and real-time monitoring via CAN-bus or Ethernet protocols.
9. Pulse Consistency: Features pre-optimized automatic dispersion matching for the input femtosecond pulses to maintain the integrity of the comb structure.

Ⅳ. Remarks

1. Installation: The supplier must perform on-site installation and verify full system integration with the existing Frequency Comb (FC1500) mainframe.
2. Acceptance Test: Upon installation, the supplier must demonstrate that the wavelength extension does not degrade the phase stability or linewidth of the original comb signal.
3. Warranty: A comprehensive warranty for parts and labor must be provided for at least one (1) year following the final acceptance date.
4. Training: Technical training regarding system operation, safety, and software-based optimization must be provided to the end-users by a qualified engineer.
5. Technical Compliance: The supplier may be required to provide a certificate of compatibility or a technical support confirmation from the manufacturer to ensure seamless integration.