

# 영문 규격서

## Commodity Description

| 종목<br>번호<br>Item No. | 관세분류<br>번호<br>HSK No. | 정부물품분류번호(8자리)K<br>orean Government<br>Commodity Classification<br>Code(eight-digit) | 품 명<br>Description                                    | 단 위<br>Unit | 수 량<br>Q'ty |
|----------------------|-----------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------|-------------|-------------|
| 1                    | 8419.89.9020          | 41103702                                                                            | Low-vibration closed-cycle cryostat<br>for NV Centers | System      | 1           |

### I . 용도(End-user's Use and Feature)

1. A low-vibration closed-cycle cryostat is designed to provide a stable cryogenic environment for NV center measurements, where mechanical vibrations and thermal fluctuations must be minimized. This system enables long spin coherence times and high-sensitivity measurements by maintaining ultra-low temperatures while suppressing vibrational noise that can disturb optical alignment and degrade signal stability
2. Closed-cycle system for NV center measurements
3. No helium consumption and continuous operation >10,000 hours

### II. 장비의 구성(Configurations of Goods)

- |                                                       |       |
|-------------------------------------------------------|-------|
| 1. Closed cycle cryostat with water-cooled compressor | 1 set |
| 2. Upper outer vacuum chamber                         | 1 set |

### III. 규격(Specification)

#### 1. Closed cycle cryostat with water-cooled compressor: 1set

- 1) Low-vibration, high vacuum cryostat
  - a. Base temperature (without options): < 3K or better
  - b. Cooling power: 150mW @5K or better
  - c. Table to cold plate vibration (without options) < 10nm peak-to-peak or better
  - d. Vacuum chamber and cryogenic workspace rigidly attached to top of customer's existing optics bench.
  - e. Cryocooler to be mounted to the floor to shunt vibrations away from optical table/sample, resulting in low vibrations at the sample stage.
  - f. Cooldown time : ~3 hours or better
- 2) Water-cooled helium compressor
  - a. Electrical power : 220VAC; 1 ph : 60Hz or better
  - b. Power consumption 60Hz(Input Power) : 2.6 kW or better

c. Requirement Cooling water : 1.9 ~ 3.8L/min. or better

d. Helium Flexible lines and control cable : 20m or more

**2. Upper outer vacuum chamber : 1set**

a. Cryogenic volume space : Ø65mm x 85mm Tall or wider

b. Optical window : (2) Horizontal + (1) vertical or more

– (x1) Ø50mm x 4mm VIS–NIR (400–1000nm) Fused Silica (vacuum window)

– (x1) Ø25mm x 3mm VIS–NIR (400–1000nm) Fused Silica (40K rad shield window)

– (x1) Ø50mm x 4mm Uncoated Fused Silica (vacuum window)

– (x1) Ø25mm x 3mm Uncoated Fused Silica (40K rad shield window)

c. Optical working distance : Vertical < 2mm or better

**IV. 기타 조건(Remarks)**

1. Installation, operating service of equipment should be performed by the qualified engineer at the end-user's site.

2. Warranty : 1year