

## 상 세 규 격 서

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### 상 세 내 역

#### 1. 구성

1. SM1-Threaded 30mm Cage Plate, 0.35"Thick, 2 Retaining Rings, M4Tap
2. Right-Angle Kinematic Elliptical Mirror Mount with Smooth Cage Rod Bores, 30mm Cage System and SM1 Compatible, M4 and M6 Mounting Holes
3. 100X Mitutoyo Plan Apochromat Objective, 436-656nm, 0.70NA, 6mm WD
4. Cage Assembly Rod, 3"Long, Ø6mm, 4Pack
5. Cage Assembly Rod, 1.5"Long, Ø6mm, 4Pack
6. 2" x 2" Positive, USAF 1951 Hi-Resolution Target
7. 2" x 2" Negative, USAF 1951 Hi-Resolution Target
8. High Resolution Microscopy Star Target
9. High Resolution Microscopy Resolution Target
10. Transmission diffraction grating
11. Ø1" Unthreaded Adapter for Ø12 mm Cylindrical Components
12. Post-Mountable Ø2.5 mm Ferrule Clamp, 8-32 Tap

#### 2. 구성

1. SM1-Threaded 30mm Cage Plate, 0.35"Thick, 2 Retaining Rings, M4Tap
  - Directly Mounts Optical Components Within a 30 mm Cage System Assembly
  - 2 Thicknesses Available: 0.35" (8.9 mm) and 0.50" (12.7 mm)
  - Tapped with Our Standard SM1 Thread (1.035"-40)

- Post Mountable via 8-32 (M4) Tapped Hole
2. Right-Angle Kinematic Elliptical Mirror Mount with Smooth Cage Rod Bores, 30mm Cage System and SM1 Compatible, M4 and M6 Mounting Holes
    - Mounts 1" (25.4 mm) Elliptical Optics at a 45° Angle to the Optical Axis
    - Eight 0.25" (6.35 mm) Deep Smooth Bore Holes for ER Cage Rods
    - Provides  $\pm 4^\circ$  Kinematic Pitch and Yaw Adjustment
    - Z-Axis Translation Using All Three Adjusters:  $\pm 0.12$ " ( $\pm 3.0$  mm)
    - 30 mm Cage System and SM1 (1.035"-40) Compatible
    - Post Mountable:
      - KCB1EC: One 8-32 Tap and One 1/4"-20 Tap (for  $\varnothing 1/2$ " and  $\varnothing 1$ " Posts)
      - KCB1EC/M: One M4 Tap and One M6 Tap (for  $\varnothing 1/2$ " and  $\varnothing 25.0$  mm Posts)
  3. 100X Mitutoyo Plan Apochromat Objective, 436-656nm, 0.70NA, 6mm WD
    - For Use from 436 nm to 656 nm
    - Suitable for Brightfield Observation
    - 5X, 7.5X, 10X, 20X, 50X, or 100X Magnification
  4. Cage Assembly Rod, 3" Long,  $\varnothing 6$ mm, 4Pack
    - For use with Our Standard 30 mm and 60 mm Cage Systems
    - Available Individually in Lengths Ranging from 1/4" to 24"
    - Packs of Four Also Available for 1/2" to 8" Lengths
    - $\varnothing 6$  mm Precision-Ground Stainless Steel
    - 4-40 Removable Setscrew at Both Ends
  5. Cage Assembly Rod, 1.5" Long,  $\varnothing 6$ mm, 4Pack
    - For use with Our Standard 30 mm and 60 mm Cage Systems
    - Available Individually in Lengths Ranging from 1/4" to 24"
    - Packs of Four Also Available for 1/2" to 8" Lengths
    - $\varnothing 6$  mm Precision-Ground Stainless Steel
    - 4-40 Removable Setscrew at Both Ends
  6. 2" x 2" Positive, USAF 1951 Hi-Resolution Target
    - Optical Density OD (Average) :  $\geq 3.0$
    - Resolution
      - Minimum: Group 0, Element 1
      - Maximum: Group 9, Element 3
    - Dimensions (inches) : 2 x 2  $\pm 0.04$
    - Surface Quality : 20-10
    - Thickness (mm) : 1.50  $\pm 0.05$
    - Type : Positive Target

- Edges : Beveled
- Flatness (mm) :  $\leq 0.00254$
- Note : Pattern Location is Centered
- Coating : Vacuum-Deposited Durable Chromium
- Substrate : Float Glass
- NIST Certification : No

7. 2" x 2" Negative, USAF 1951 Hi-Resolution Target

- Optical Density OD (Average) :  $\geq 3.0$
- Resolution :
  - Minimum: Group 0, Element 1
  - Maximum: Group 9, Element 3
- Dimensions (inches) :  $2 \times 2 \pm 0.04$
- Surface Quality : 20-10
- Thickness (mm) : 1.50
- Type : Negative Target
- Edges : Beveled
- Flatness (mm) :  $\leq 0.00254$
- Note : Pattern Location is Centered
- Coating : Vacuum-Deposited Durable Chromium
- Substrate : Float Glass
- NIST Certification : No

8. High Resolution Microscopy Star Target

- Substrate : Fused Silica w/Chrome deposit
- Optical Density OD (Average) :  $OD > 7$  @ 400nm, 6 @ 550nm, 4.5 @ 750nm, 3.6 @ 1000nm
- Dimensions (mm) : 10 x 10 x 1
- Construction : Stainless Steel, 75 x 25 x 1.5mm, microscope slide format
- Spectral Range : 200 - 2000nm
- Pattern : 1 central Siemens star with 36 segment pairs, 8mm diameter
- Pattern Tolerance : 100nm/cm = 10<sup>-5</sup>

9. High Resolution Microscopy Resolution Target

- Substrate : Fused Silica w/Chrome deposit
- Optical Density OD (Average) :  $OD > 7$  @ 400nm, 6 @ 550nm, 4.5 @ 750nm, 3.6 @ 1000nm
- Dimensions (mm) : 10 x 10 x 1
- Construction : Stainless Steel, 75 x 25 x 1.5mm, microscope slide format

- Spectral Range : 200 - 2000nm
- Pattern : Pinholes Diameter: 4  $\mu$ m, 2  $\mu$ m, 1  $\mu$ m, 0.5  $\mu$ m, 0.25  $\mu$ m
- Line patterns : 59 groups, 7.5 - 3300 lp/mm
- Line Widths : 66.7  $\mu$ m - 0.152  $\mu$ m
- Pattern Tolerance : 100nm/cm = 10<sup>-5</sup>

10. Transmission diffraction grating

- Groove density : 80groove/ mm
- Thickness: 3.00 (0.5 mm)

11. Ø1“ Unthreaded Adapter for Ø12 mm Cylindrical Components

- Length : 0.48 “
- Diameter : 11 mm

12. Post-Mountable Ø2.5 mm Ferrule Clamp, 8-32 Tap

- Compatible Component Diameter : 2.5 mm (0.05 “)
- Compatible Components : Ø2.5 mm Ferrules, FC/PC, FC/APC, SC/PC,

### 3. 기타사항

가. 설치위치 : 경북 구미시 구미대로 350-27 3D디스플레이 부품소재실용화지원센터 106호

나. 설치개요 : 규격서의 조건에 맞는 광학 소자 납품

다. 납품기한 : 계약일로 부터 90일 이내

라. 계약의 이행

- 1) 본 규격서에 대한 주계약자(이하 “계약자” 라 한다)와 발주기관 간의 해석상 이견은 발주기관의 해석에 따라야 하며, 본 규격서에 특별히 명시되지 않은 사항은 정부계약법 등의 규정과 일반 관례에 따른다.
- 2) 발주기관은 계약내용 전부에 대한 권리를 행사할 수 있으며 계약자는 이에 대하여 전적으로 동의해야 한다.
- 3) 본 규격서에 명시된 모든 조항은 본 사업의 원활한 추진에 필요한 최소한의 사항만을 규정하였으므로 상세히 기술하지 않았거나 누락된 사항에 대해서도 정상운영 및 서비스에 문제가 발생되지 않도록 계약자는 사전 조치를 취하여야 한다.
- 4) 본 규격서에서 요구하는 성능 및 특성에 대해 계약자의 오인 또는 누락된 상태로 계약 체결되어, 계약 후 이를 보완하기 위한 설계 변경, 물품 등을 추가해야 할 경우 계약자 부담으로 시행한다.
- 5) 계약자는 공급하는 제품의 성능, 품질 등에 대한 최종적인 책임을 진다.

### 4. 기타조건

가. 납품기한 : 계약 후 90일 이내

나. 규격관련 문의사항 : 실감미디어연구센터 우성수 선임연구원(054-460-9092)