
UNION OPTICAL CO., LTD.

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EMA-400 : Standard Specifications

Alignment Scope : (Binocular)

1. Objective : 10X (N.A. 0.15, WD 30mm) 2 pcs
2. Objectives Separation : 15-75mm
3. Eyepiece : 10X Field Number 16
4. Total Magnification : 100X
5. Observation View Field : Split Field System
6. Focusing System : Manual
7. Illuminator for Observation : Red LED (Wave Length : 633nm)

Exposure Light Source Unit :

1. Lens : Integrator Lens
2. Mercury Lamp : 250W ultra-high pressure vapor mercury lamp
3. Effective Exposure Area : ϕ 100mm
4. Intensity Distribution : $\pm 5\%$ or less
5. Intensity of Illumination : 20mW/cm² (405 nm)
6. Exposure Time Control : Digital Timer and Rotary Solenoid
7. Mercury Lamp Lighting Unit : With Lamp Hour meter for AC100V

Mask Holder :

1. Size of Photo Mask (Maximum : 5 inch)
Standard : 5 inch
Thickness of Object : Maximum : 2.3mm
2. Mask Holder (Exchangeable)
Standard : 5 inch
 θ movement : $\pm 2^\circ$

Wafer Stage :

X/Y/Z/ θ axes : Controlled manually by handle
X/Y stage stroke : ± 5 mm
 θ rotation stroke : $\pm 5^\circ$
Z stroke : 0-4mm

Wafer Unit :

1. Wafer Size
Standard : ϕ 4"
Standard Applicable Thickness : 1mm or less
2. Wafer Chuck (exchangeable) :
Standard : ϕ 4"

Control Unit :

Switches for absorption of mask / absorption of wafer / exposure

Alignment Accuracy :

1. Alignment Accuracy : Within $\pm 3 \mu$ m (visually operated)
2. Resolution : ϕ 4" Wafer Resist OFPR-800 1 μ m thick
resolution of 3 μ m

Utilities required :

1. Power Source :
for main unit / mercury lamp lighting unit / LED illumination unit
2. Vacuum : 21.3kPa (atmospheric air – 80kPa) or lower
Connecting Pipe ϕ 1/4 Swagelock
3. Installation Space :
Main Unit : W 735 x D 650 x H 605 mm
Base Size : W 700 x D 490 mm
4. Weight : approx. 90 kg