

# Optical Heterodyne Micro Vibration Measuring

## MLD-221 Series (Vertical or Horizontal Measurement Type)

1 Axis Measurement

MLD-221V (Vertical Direction)

MLD-221H (Horizontal=In-Plane Direction)

MLD-221D (Vertical or Horizontal Selective Type)

### Summary

This new series is designed for an extensive use at a production line, with compact body and with reasonable price.



### Specification

Model	MLD-221V	MLD-221H	MLD-221D (V or H Selective Type)	
Direction of Vibration	Vertical	Horizontal	Vertical	Horizontal
Spot Diameter (20times objective lens)	About $\phi 10 \mu\text{m}$	About $\phi 15 \mu\text{m}$	About $\phi 10 \mu\text{m}$	About $\phi 15 \mu\text{m}$
	Light Source: He-Ne Laser 633nm (Stabilized)			
Range of Velocity	$5 \mu\text{m/sec} \sim 5\text{m/sec}$	$20 \mu\text{m/sec} \sim 5\text{m/sec}$	$5 \mu\text{m/sec} \sim 5\text{m/sec}$	$20 \mu\text{m/sec} \sim 5\text{m/sec}$
Response Frequency	1Hz $\sim$ 1.5MHz			
Low Pass Filter	3.3KHz, 10KHz, 33KHz, 100KHz, 330KHz, OFF			
High Pass Filter	OFF, 33Hz, 330Hz, 3.3KHz			
XY Stage	Manual Type Micro Meter, Dimension: 100 X 100mm, Min. Scale: $10 \mu\text{m}$ , Stroke: 20mm			
Electric Source	AC100V, below than 800VA			
Outer Dimension and Weight	Optical Detecting Unit: 400mm(W) X 460mm(D) X 840mm(H), 50kg Velocity Unit: 430mm(W) X 450mm(D) X 150mm(H), 20kg Laser Power supply: 430mm(W) X 450mm(D) X 100mm(H), 10kg			

### Construction

1. Optical detection part
2. Observing part
3. Sample mount table
4. Data processing unit of velocity signal
5. Laser power part

## Specification of each part

### 1. Optical detecting part

- 1) Basic unit Alumi. Hanicam Board (Coated with magnetic stainless steel)
- 2) Aiming Fine control rack pinion (movement +/- 15mm)
- 3) Objective lens 20 times WD=3.1mm (Standard)
- 4) Laser Fiber attached to base frame
- 5) Laser wavelength 633 nm, 2mW (Safety classification 2)

### 2. Observing Part

- 1) Lighting unit
- 2) Halogen lamp (12V 50W)
- 3) Straight cylinder type for TV camera
- 4) C mount TV adapter
- 5) CCD color video camera
- 6) Power for camera
- 7) 14" color monitor

### 3. Sample Mount Stage

- 1) Moving axis X-Y
- 2) Stage dimension 100 x 100 mm
- 3) Moving method Manual micrometer
- 4) Minimum scale 10  $\mu$  m
- 5) Stroke 20mm
- 6) Tap on the stage 50x50 and 90x90 pitch M4

### 4. Data handling for velocity signal

#### 1) Measuring range

Vertical	1000mm/sec/V (FS+/-5V)	Horizontal	4000mm/sec/V (FS+/-1.25V)
	100mm/sec/V (FS+/-10V)		400mm/sec/V (FS+/-10V)
	10mm/sec/V (FS+/-10V)		40mm/sec/V (FS+/-10V)
	1mm/sec/V (FS+/-10V)		4mm/sec/V (FS+/-10V)
	0.1mm/sec/V (FS+/-10V)		0.4mm/sec/V (FS+/-10V)

## Remarks:

- \* Displacement unit, vibration isolation table etc. are options.
- \* Specification may be changed without any prior notice.



## **NEOARK Corporation**

Osaka Office

10-6 Chayamachi, Kita-ku, Osaka 530-0013, Japan

Phone: 81-6-6371-3527, Fax: 81-6-6376-4560

URL <http://www.neoark.co.jp> e-mail: [osaka@neoark.co.jp](mailto:osaka@neoark.co.jp)