

## MRA-50 Autocollimator Data Sheet (18 August 2025)

### 1.0 Introduction

The MRA-50 is a compact pinhole autocollimator that provides a visual representation of angular alignment.

### 2.0 Manufacturer

Micro-Radian Instruments, 131 E. Grover St, Lynden, WA 98264 USA (CAGE 50223)

### 3.0 General Specifications

Recommended maximum working distance	1 meter
Emitted beam diameter (nominal)	18 mm
Recommended minimum target mirror size	5 mm diameter
Maximum angular measuring range	±3600 arc-seconds
Resolution (typical)	5 arc-seconds
Pinhole diameter	100±5 microns, subtends 100±5 arc-seconds
Eyepiece magnification	20X
Reference reticle (optional, add R suffix)	10x10 grid or crosshairs with concentric circles
Light source	white LED
Power input	100VAC to 240VAC
Power input (optional, add U suffix)	5VDC
Weight	297 g

### 4.0 Housing

All housing components are machined from a solid block of 6061 aluminum and black anodized inside and out. There are no identification markings on the body.

### 5.0 Electronics

The MRA-50 is a purely visual device and contains no electronics. Image viewing is done through an adjustable focus eyepiece. An external plug-in power supply is provided to power the autocollimator LED light source. The power supply has a switching transformer that will automatically switch to accommodate inputs in the range of 100VAC to 240VAC. The power supply provides a DC voltage output and has an adjustment knob to adjust the light source intensity.

The MRA-50U changes the power input to 5VDC. This option includes a 3 meter hardwired cable terminating in a USB type A connector with an in-line potentiometer to adjust the light source intensity. This version is designed to plug directly into a USB port for power.

## 6.0 Calibration

The MRA-50 pinhole diameter subtends 100 arc-seconds (nominal). There is no electronic calibration and the autocollimator does not require recalibration.

Measurements are typically made by viewing multiple surfaces simultaneously and checking their mutual alignment.

The MRA-50R includes a non-adjustable reference reticle built into the eyepiece. The reticle is required if the autocollimator itself is used as a reference for measurements.

## 7.0 Model Variations

MRA-50 includes no reticle and a plug-in power supply for 100VAC to 240VAC use

MRA-50R includes a reticle and a plug-in power supply for 100VAC to 240VAC use

MRA-50U includes no reticle and a hardwired cable for 5VDC USB use

MRA-50RU includes a reticle and a hardwired cable for 5VDC USB use

## 8.0 Outline and Mounting (Inches)

