

Colorlight

Mica 310 Pro

Production Line Automated Calibration System

Specification v1.0

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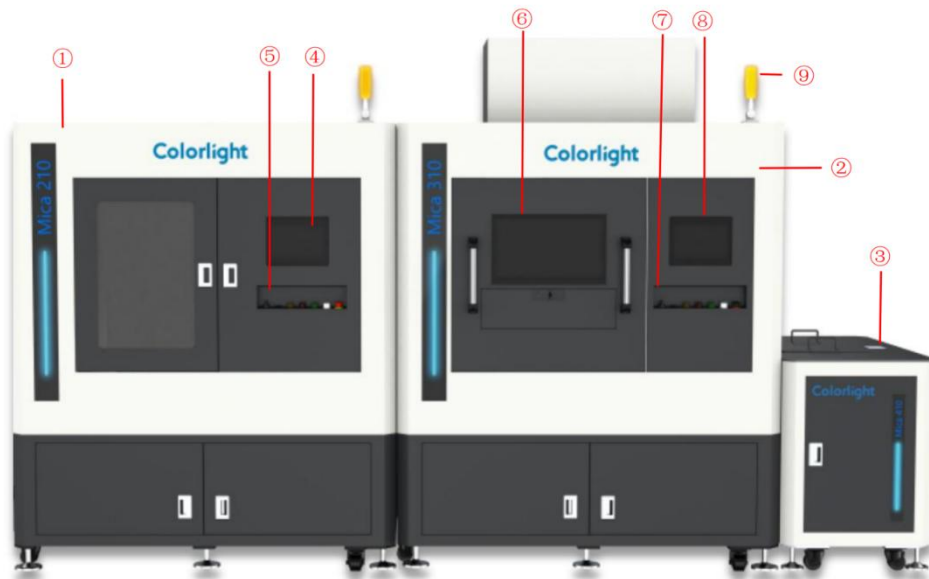
01 Introduction

The Mica 310 Pro Production Line Automated Calibration System is Colorlight's self-developed solution for automatically calibrating Mini/Micro LED display modules, with exceptional accuracy and efficiency.

This system integrates scientific-grade image capture instruments, assembly line equipment, and a data storage and management server. Based on this, the software platform for debugging and monitoring, and that for data and business management are developed, all designed with practical sections such as order management, automated manufacturing, data storage & management, and after-sales maintenance.

By managing the entire process of LED display calibration, the Mica Production Line Automated Calibration System significantly enhances the production efficiency and calibration effect. Moreover, it standardizes the production and management process, ensures data security, simplifies operation, and reduces after-sales costs.

02 Appearance



No.	Name	Description
1	Mica 210	Loading and unloading station
2	Mica 310	Collection station
3	Mica 410	Lift and reflow station
4	Control Panel-1	Displays the status of loading and unloading station, allows parameter setting, and controls the equipment.
5	Switches-1	Include buttons: Power On/Off, Start, USB, Stop, Reset, and E-Stop.
6	Monitor	Displays the user interface for monitoring function.
7	Control Panel-2	Displays the status of collection station, allows parameter setting, and controls the equipment.

8	Switches-2	Include buttons: Power On/Off, Start, USB, Stop, Reset, and E-Stop.
9	Indicator light	Features red, green, and blue lights.

 **NOTE**

- **220V:** Indicates that a 220V power supply is required.
- **0.5mp:** Indicates that a 0.5MPa air pressure is required.

03 Features

Compatible with Various Modules

- Supports calibration for:
 - COB module
 - SMD module
 - GOB module
 - Virtual-pixel module
- Modular design with an interior dark room, meeting environmental requirements of various production lines.

High Precision & Enhanced Effect

- Accurate and stable data collection using scientific-grade calibration camera.
- Enables random assembly of modules without color difference using the new generation of gradient integration algorithm and thermal effect algorithm.

Multi-Layer Brightness / Chroma Calibration

- High brightness calibration
- Low brightness calibration
- Multi-layer calibration
- Brightness calibration
- Chroma calibration
- High-precision calibration

Full Process Management with High Efficiency

- Categorized authorization and clear work division: order creation & management, user creation & management.
- Cross-platform real-time monitoring and data backup throughout the calibration.
- SMD calibration: \approx 220pcs/h; COB calibration: \approx 120pcs/h
- Supports integration with MES, ERP, and other production management systems.

Automatic Lighting-Up & Smart After-Sales Maintenance

- Automatic lighting-up and calibration.
- Sort by OK/NG results.
- One-click UID matching and coefficient download.

Simple Operations

- Automatic loading and unloading, reducing labor costs.
- Automatic code scanning and accurate module mounting onto jigs.
- Compatible with modules of various specifications and models (up to 337.5mm*343.5mm supported by a standard machine).

04 Specifications

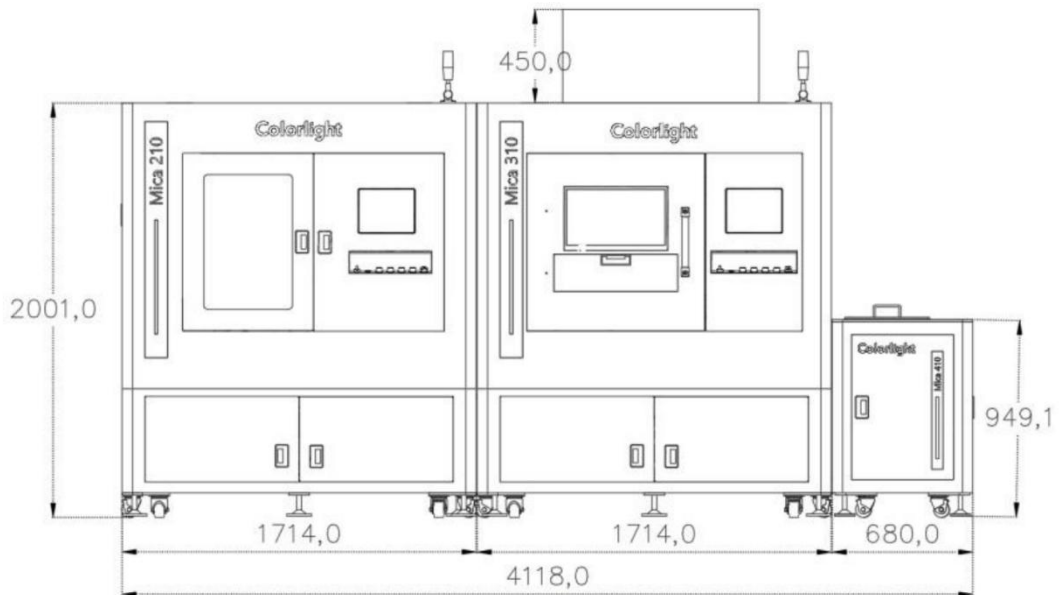
Properties	
Series	Mica
Model	310 Pro
System Accuracy	
Luminance (Y)	±1%
Color coordinates (x,y)	±0.003
Repeatability	
Luminance (Y)	±0.15%
Color coordinates (x,y)	±0.0005
Efficiency	
UPH	SMD calibration: ≈220pcs/h
	COB calibration: ≈120pcs/h
Dimensions (L×H×W)	
Total	4118.0mm (162.1")×2450.0mm (96.4")×1570.0mm (61.8")
Mica210 (L×H×W)	
Equipment	1714.0mm (67.5")×2000.0mm (78.7")×1570.0mm (61.8")
Package	2000.0mm (78.7")×2200.0mm (86.6")×1700.0mm (66.9")
Mica310 (L×H×W)	
Equipment	1714.0mm (67.5")×2450.0mm (96.5")×1270.0mm (50.0")
Package	2000.0mm (78.7")×2700.0mm (106.3")×1500.0mm (59.0")
Mica410 (L×H×W)	
Equipment	680.00mm (26.8")×950.0mm (37.4")×1270.0mm 50.0")
Package	1000.0mm (39.4")×1200.0mm (47.2")×1400.0mm (55.1")
Weight	
Total	≈5250KG (11574.27lbs)
Mica 210	2800KG (6172.94lbs)
Mica 310	2200KG 4850.1lbs)
Mica 410	250KG (551.2lbs)

Electrical Parameters			
Power supply	AC220V		
Max. power	5KW		
Input air pressure	0.4MPa~0.7MPa		
Indoor vibration	≤1μm/s		
Operating Environment			
Temperature	5°C~40°C (41°F~104°F)		
Humidity	25%RH~50%RH, non-condensing		
Storage Environment			
Temperature	-10°C~60°C (14°F~140°F)		
Humidity	25%RH~50%RH, non-condensing		
Placement			
The equipment must be placed horizontally. Do not turn them over or place them vertically.			
Others			
Location accuracy	0.02mm		
Packing list	No.	Items	Quantity
	1	Loading/unloading station (Mica 210)	1 PCS
	2	Collection station (Mica 310)	1 PCS
	3	Lift/reflow station (Mica 410)	1 PCS
	4	CCM camera	1 PCS
	5	Jig (with wireless transmission module)	3 PCS
	6	Industrial PC	1 PCS
	7	Keyboard & mouse	1PCS
	8	Temperature sensor	1 PCS
	9	Hex key set	1 PCS

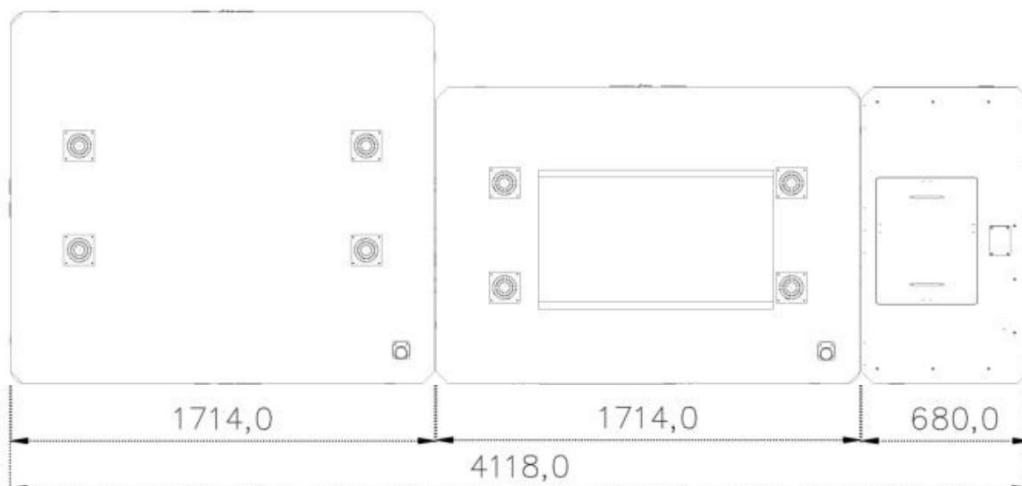
05 Reference Dimensions

Unit: mm

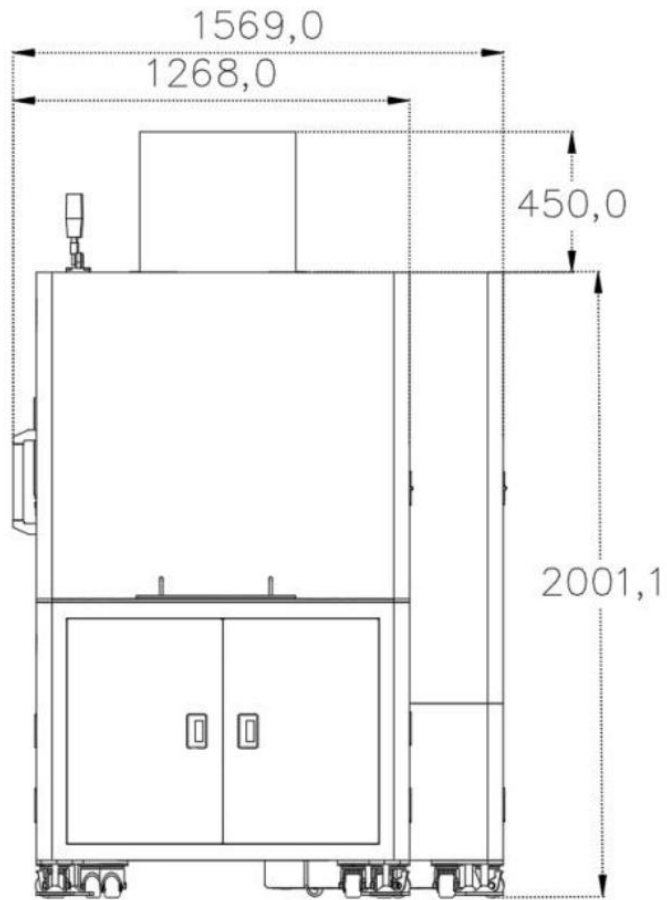
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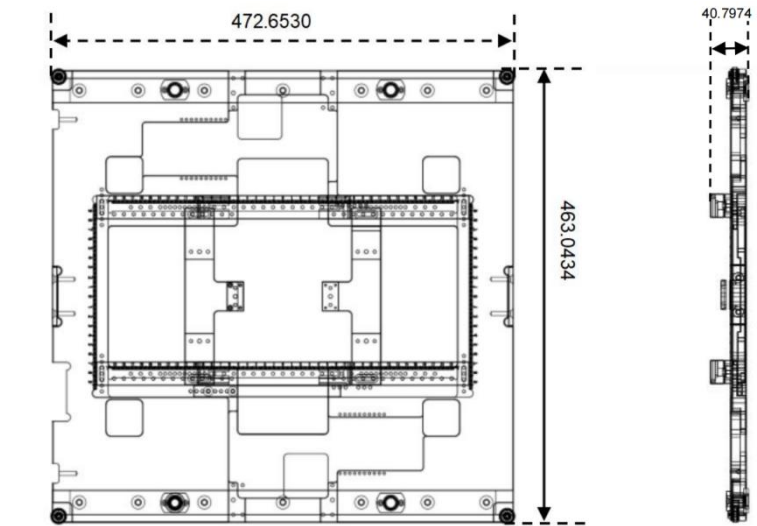
- Top



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06 Statement

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