Caliris

Scientific Grade Calibration System

Specifications

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1 Overview

The Caliris is an advanced calibration system specifically designed by NovaStar for LED screens with small pixel pitch. It is suitable for full screen calibration and cabinet calibration. Using the pixel level calibration technology, the Caliris measures and calibrates brightness and chroma of LED screen to perfectly eliminate the color discrepancies. Thanks to the calibration, the LED screen can have consistent brightness and chroma and display smoother images, greatly improving the display effects.

2 Features

- 16-bit full frame scanning technology to output high-quality and high-stability image data
- Accurately matched CIE XYZ tricolor filter to measure the brightness and chroma of each LED
- Visual balancing technology to allow for better display effects of blue and white
- Correction of dark and bright lines between partitions to allow for smooth transition
- One-click auto calibration
- 480×330 pixels collected each time
- 4K LED screen calibrated at a time

3 Hardware Structure

Hardware	Description
	• Astronomical CCD Camera C1200 • AF-S NIKKOR 28-300mm f/3.5-5.6G ED VR
	• Manfrotto 190 series professional 4-section aluminum alloy tripod • Manfrotto 410 tripod head

4 Camera Specifications

Parameter	C1200
Sensor	Sony ICX834
Resolution (W×H)	4250×2838 (12 megapixels)
Image Size	13.2 mm × 8.8 mm
Pixel Size	3.1 μm × 3.1 μm
Pixel Dark Current	< 0.002 electrons per second at -10°C
Dynamic Range	75 db
Brightness Measurement Accuracy	CIE (Y) +/-2%
Chroma Measurement Accuracy	CIE (x, y) +/-0.003
Shutter	Electronic Exposure range: 100 microseconds to 240 minutes
Camera Gain	User selectable High gain: 0.13 e-/ADU (default) Low gain: 0.28 e-/ADU
Computer Connectivity	USB 2.0 (USB 1.1 compatible)
Cooling Fan Control	Intelligent
Lens Mount	Adapter ring required for connecting Nikon lens
Dimensions	W4.45" × H4.45" × D2.50"
Weight	40 oz./1130 g
Input Voltage	90 V–240 V AC, 50/60Hz
Power Consumption	24 W
Operating Environment	Temperature: -20°C–30°C Humidity: 10%–90%, non-condensing

5 Zoom Lens

Parameter	AF-S NIKKOR 28-300mm f/3.5-5.6G ED VR
Maximum Aperture	f/3.5-5.6
Minimum Aperture	f/22-38
Focal Length	28–300 mm
Lens Construction (Elements/Groups)	19 elements in 14 groups (including 2 ED and 3 aspherical lens elements)
Angle of View (35 mm (135) Format)	75°–8°10'
Angle of View (Nikon DX-Format)	53°–5°20'
Minimum f/stop	22–38
Minimum Focus Distance (Microspur Setting)	0.5 m (throughout the entire zoom range)
Maximum Reproduction Ratio (Microspur Setting)	0.32x (at maximum telephoto position)
Approx. Dimensions (Diameter × Length)	83 mm (maximum diameter) × 114.5 mm (extension from the camera's lens-mount flange)
Approx. Weight	800 g

6 Tripod

Parameter	Manfrotto MT190XPRO4CN
Type	190 series professional 4-section aluminum alloy tripod
Center Column Type	Rapid
Center Column	1
Thread	3/8" screw
Material	Aluminum alloy
Color	Black
Load Capacity	7 kg
Minimum Height	8 cm
Maximum Height	160 cm
Weight	2.1 kg
Folded Length	49 cm

7 Tripod Head

Parameter	Manfrotto 410
Type	Gear head
Center Column Type	Rapid
Max Operating Strength	130 mm
Load Capacity	5 kg
Weight	1.22 kg
Material	Aluminum alloy
Operating Height	13 cm
Panoramic Rotation	360°
Other Performances	Front tilt: +90°/-30° Lateral tilt: +30°/-90°

8 Accessories

Type	Name	Descriptions
Package	Cardboard box	810 mm × 670 mm × 275 mm, kraft paper
Accessory	Suitcase	1 pcs, convenient to carry the camera
	Tripod bag	1 pcs, convenient to carry the tripod
	2-pin power adapter	1 pcs, AC 100–240V-50/60Hz, power cord of camera
	USB cable	1 pcs, used to connect camera to PC
	USB drive	1 pcs. It stores the authorization file and calibration software.
	Dongle	1 pcs, authorization device of calibration software