



B2000ES

Sphere LED Controller

Specification V4.0



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1 Update Records

Document Version	Hardware Version	Release Time	Update Record
V4.0	ST2000 (V2.0.0)	August 2 (th), 2025	First Release

2 Product Introduction

The B2000ES Customized Controller is a dedicated, custom-designed 20-port Gigabit Ethernet output controller. It features versatile video signal reception capabilities, ultra-high-definition full 4K×2K@60Hz image processing and transmission capabilities, and can transmit processed video to LED displays via Ethernet ports. It delivers powerful processing capabilities, ultra-stable performance, and exceptional value for money.

The B2000ES is widely applicable in non-rectangular LED displays such as sphere LED screens and circular ring displays.



3 Product Features

3.1 Input/Output Interface

- Multiple input interfaces
 - 1×HDMI2.0
 - 1×DP1.2 (Choose 1 of the 2 options)

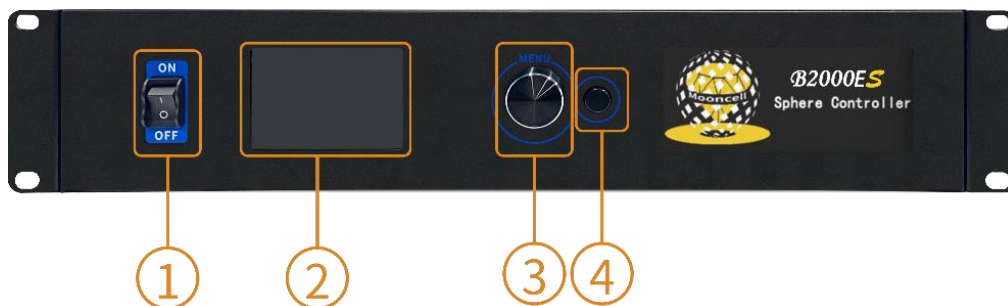
- Output Interface
 - 20 Gigabit Ethernet ports, supporting vertical and horizontal tiling in any configuration
 - Maximum load capacity: 8.84 million pixel
- Audio Interface: 1×AUDIO, Synchronous transmission via network cable
- Control Interface
 - 1×USB interface for communication, enabling multiple sending cards to be controlled from a single PC
 - 1×LAN, 100Mbps Ethernet port for connecting to a host computer for debugging
 - 1×RS232 serial port for connecting to central control equipment

3.2 Diverse Practical Functions

- Supports Ethernet loopback backup and dual-master backup
- Supports multiple preset resolutions and custom resolution settings
- Compatible with multiple input frame rates including 30Hz, 50Hz, 60Hz, and 120Hz
- Supports host software monitoring of sending card operating parameters and status
- Supports configuration parameter readback
- Supports Gigabit Ethernet error rate detection
- Supports 3D display, active 3D display

4 Product Appearance

Front Panel

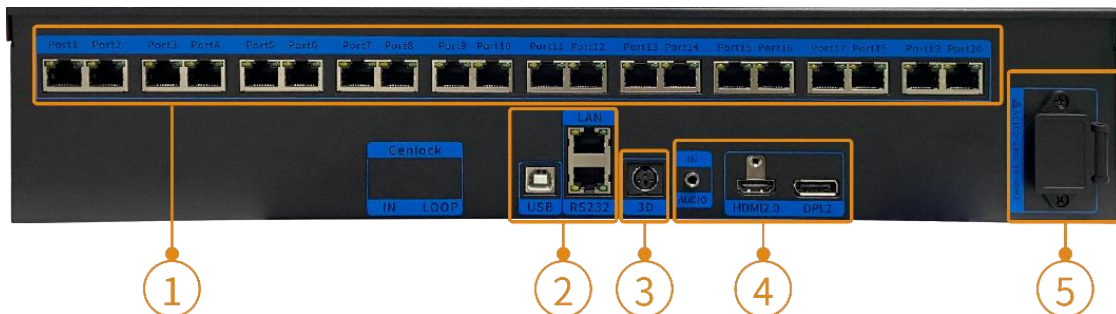


*Product images are for reference only. The actual product shall prevail upon purchase.

4.1 Data Interface Illustration

#	Name	Illustration
1	Switch	Main Control Power Switch
2	LCD	Used to display the device's current status and configure menu item parameters. LCD Resolution: 320×240
3	Rotate Button	1. On the main interface, press the knob to enter the menu operation interface; 2. In the menu operation interface, rotate the knob to select menus; press the knob to select the current menu or enter submenus; 3. After selecting a menu with parameters, rotate the knob to adjust values. Note: Press the knob again to confirm changes after adjustment; 4. Long press to unlock menus
4	ESC	Return/Cancel the current menu or operation

Rear Panel

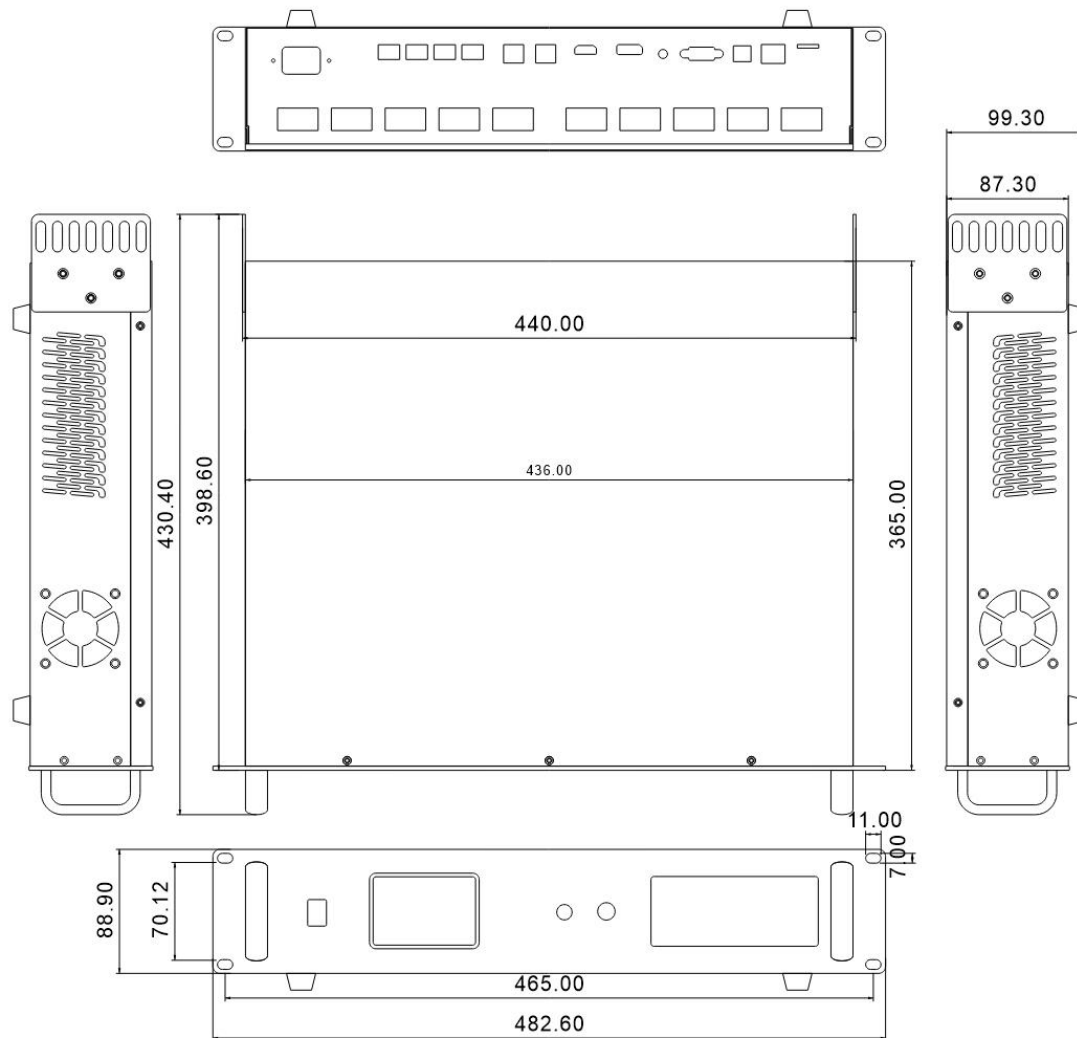


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Rear Panel		
Input Interface		
#	Name	Illustration
4	HDMI2.0	1×HDMI 2.0, supports up to 3840×2160@60Hz with backward compatibility. Maximum customizable graphics card width: 7680 Maximum customizable graphics card height: 4096 Support HDCP1.4 and EDID1.4
	AUDIO	1×3.5mm audio input jack
	DP1.2	1×DP1.2, video signal input interface. Maximum resolution 3840×2160@60Hz, backward compatible. Graphics card customizable maximum width 7680 Graphics card customizable maximum height 4096 Support HDCP1.3

Output Interface		
#	Name	Illustration
1	Gigabit Ethernet port	◆ 20 Gigabit Ethernet ports with a combined load capacity of up to 8.84 million pixels ◆ Maximum loading Capacity per port: 650,000 pixels at 8-bit resolution
Control Interface		
#	Name	Illustration
2	LAN	100Mbps Ethernet interface for connecting to host computer for debugging
	USB (B-type)	Connects to PC software for communication
	RS232	1×RS232 interface for connecting to central control equipment
Optional	Genlock	Genlock control interface, one input channel, one loop-through output channel
Extended Interface		
#	Name	Illustration
3	3D	Connect the 3D transmitter
AC power interface		
#	Name	Illustration
5	AC power interface	AC-100-240V-50/60HZ AC power interface

4.2 Dimensions



Tolerance: ± 0.3 Unit: mm

5 Product Specification

5.1 Basic Parameters

Loading Capacity	Single Ethernet Port	Maximum load capacity: 655,360 pixels Network port load capacity (width × height): 1280 × 512
	Whole unit	8.84 million pixels
Loading Range	Width	640—7680 pixels
	Height	480—4096 pixels
Sphere Loading Limit	Width	7680
	Height	4096
Offset Range	Width	0—7680 pixels
	Height	0—4096 pixels
Note: When enabled the F5, height input is limited to 4096; when disabled, it is limited to 8192. Enabled by default.		

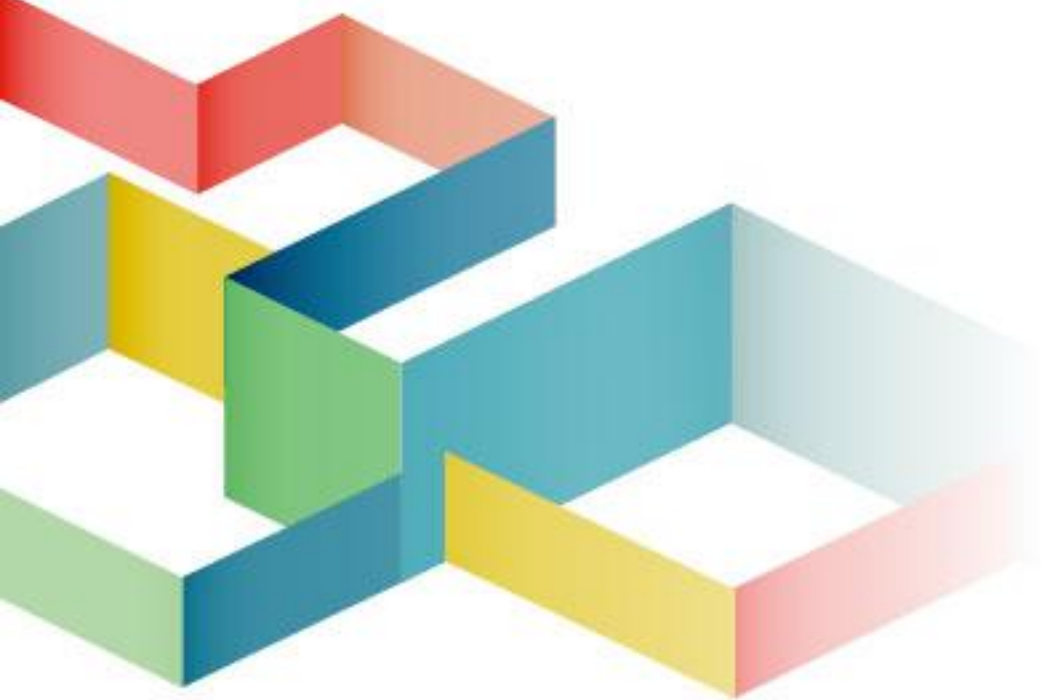
5.2 Specification

Electrical parameters	Rated voltage	AC-100-240V-50/60HZ
	Rated Power	70W
Working environment	Working temperature	-20°C~60°C
	Working humidity	5%RH~85%RH has no condensation.
Storage environment	Temperature	-20°C~70°C
Chassis size	482.6mm×430.4×99.3mm	
Net weight	4.66 kg	
Outer packing size	565mm×445mm×185mm	
Gross weight	6.5 Kg Description: Including wire, accessories	
Packing mode	1 PCS /box	
Accessory	1 × power cord, 1 × USB cable, 1 × HDMI cable, 1*DP Cable, 1 × certificate	

*Current and power consumption may vary depending on factors such as product usage, environment, and settings.

6 Precautions

- High voltage hazard: This product operates at AC 100V~240V.
- Do not allow liquids or metal fragments and other conductive materials to enter the device, to prevent safety accidents.
- Please use the device in a dry and clean environment.



National after-sales services hotline: 400-881-3531

Official website: www.mooncell.com.cn

Address: Mooncell Building, Third Industrial Zone, Baoshi
South Road, Shiyan Street, Baoan District, Shenzhen

