DS-C66S
Video Wall Controller

Introduction

The video wall controller is mainly used for screen splicing control system, and is the core control device of the system. As a new-generation FPGA-based pure hardware image processing device, it adopts the structure of main control board and service boards. It supports the video input and video output via various ports. It supports the network encoding and real-time preview of signal sources. It supports the decoding and output of various network signal sources. It supports the high-definition (HD) video splicing and fusion. It supports the window splicing, roaming window, and other operations. It supports the management on users, network, operation, alarm and logs.

Features

Hardware Structure

- The device adopts a 4U standard rack-mounted design with a 12-slot chassis supporting 6 input and 6 output slots.
- The device adopts a 2U standard rack-mounted design with a 6-slot chassis supporting mixed installation of input and output boards.
- Both 4U and 2U chassis feature 1 fan with left-right airflow cooling.
- The chassis supports button operations, including 2 custom scene switch buttons and 2 scene switch buttons.
- The device features a plug-and-play modular design for flexible expansion and hot-swappable service boards for easy maintenance.
- The 4U chassis includes a 7-inch touch IPS LCD panel, while the 2U chassis features a 4.5-inch touch IPS LCD panel, supporting real-time monitoring of chassis and sub-board status.
- The chassis supports 2 × 3.5mm audio input and 2 × 3.5mm audio output.

Video Input

- The device supports video input from computers, video conferencing terminals, and ultra-high-resolution servers, is compatible with DVI, HDMI, HDMI 4K, DP 4K, and SDI signal inputs, and allows custom resolution input.
- The device supports both composite and standalone audio input, with 16-bit, 32K/48K sampling, and dual-channel capabilities.
- Both image capture and output support RGB888 for lossless image quality, with support for up to RGB101010.
- The device supports ultra-high-resolution fusion, accommodating up to sixteen 4K ultra-high-definition signal inputs.
- The device supports input OSD overlay and input image cropping to remove black borders.

Video Output

- The device supports DVI, HDMI, and HDMI 4K video signal output and the video signal output via network ports.
- 2K sub-board supports 4 × 1080P60 outputs and 4K sub-board supports 2 × 4K outputs. Output is compatible with LCD and LED displays, with customizable output resolution.
- The main control board supports standalone audio and HDMI sub-boards support composite audio.
- The device utilizes frame synchronization technology to ensure all output ports display completely synchronized, intact, and smooth images without stuttering, frame loss, tearing, or seams.
- The LED controller board supports mini loading (0.65MP per network port) and standard loading modes (2.925MP per network port). Standard load mode requires compatible screen support.

Video Wall Function

- The device supports video wall preview and joint source preview with an optional preview board.
- The 12-slot chassis supports arbitrary large-screen splicing for up to 24 displays when fully configured with all boards.
- The 6-slot chassis supports arbitrary large-screen splicing for up to 20 displays when fully configured with all boards.
- The device supports windowing, roaming functions, and arbitrary layer windowing on a single interface.
- The device supports 3 background images, with 1 per wall at 1920 × 1080 resolution.
- The device supports multiple video walls, with support for up to 8 video walls.
- The device supports up to 128 preset scenes, allowing users to customize the video wall layout for each scene.
- The device supports 24 signal source group auto-switching (including single-window, partial-window, and full-window modes), allows saving all auto-switching resources in scenes, and enables custom settings for location, scene, and time per plan.
- The device supports double-click to zoom in/out on split-screen sub-windows.

Operation and Maintenance

- The device supports exporting logs to a USB drive via the front panel USB port.
- The device supports access and operation via PC client and Web interface, compatible with browsers such as Chrome 45 and above.
- The device supports access and operation via Android and iOS clients.
- The device supports remote parameter retrieval, configuration, and the remote export and import of parameters.
- The device supports remote monitoring of system operation status and logs, as well as remote re start, restore to default settings, upgrades, and other daily maintenance operations.
- The device supports automatic fault detection and alerts, including abnormal device alarms for sub-board online status such as network disconnection, IP conflict, unauthorized access, temperature exceedance, and abnormal fan status.
- The device supports user permission management via HCP platform, allowing users of different permission levels to access designated resources and operate specified video wall modules.
- The device supports manual time synchronization or NTP time synchronization.

Video Decoding

- Decoding boards support decoding of network sources such as network cameras and NVRs.

Device Access

- The device supports access to network source devices for decoding via ONVIF standard protocol.
- The device supports device control via network keyboards, serial port keyboards, or tablets, enabling functions like video split-screen switching and scene switching.

Advanced Features

- The device supports LCD control via software, including screen on/off, signal source switching, and adjustments for brightness, contrast, color, sharpness, and horizontal/vertical image positioning.
- The device supports HDR10, HLG, and HDCP access.
- The device supports 8-bit/10-bit and adapts to input sources with frame rates ranging from 24Hz to 120Hz, featuring adaptive frame rate support.
- The device supports reverse control of ultra-high-resolution server keyboard and mouse via the USB port on the main control board.
- The device supports Genlock synchronization port.

Available Model

Chassis (Standard)		
Name	**Model**	**Description**
Chassis	DS-C66S-S6	6-slot chassis (integrated with 1 power supply), 6 hybrid slots, 1 main control board
	DS-C66S-S12	12-slot chassis (integrated with 1 power supply, optional 1 additional power supply), 6 input slots, 6 output slots, 1 main control board
Main control board	DS-C66S-MCU	1 debug serial port, 1 RS-232/RS-485 port, 1 Genlock input port, 1 Genlock loop-through output port, 1 USB port, 2 audio input ports, 2 audio output ports, one 1000 Mbps Ethernet port (RJ-45)
Service Board (Optional)		
Name	**Model**	**Description**
HDMI input board	DS-C66S-04HI	4 HDMI input ports
DVI input board	DS-C66S-04DI	4 DVI input ports
4K HDMI input board	DS-C66S-02HI/4K	2 HDMI UHD input ports
4K DP input board	DS-C66S-02DPI/4K	2 DP UHD input ports
4K SDI Input Board	DS-C66S-04SDI/4K	4 SDI input ports, 4 SDI loop-through output ports
Decoding board	DS-C66S-DEC	Supports up to 2 boards per chassis.
HDMI output board	DS-C66S-04HO	4 HDMI output ports
DVI output board	DS-C66S-04DO	4 DVI output ports
4K HDMI output board	DS-C66S-02HO/4K	2 HDMI UHD output ports
Preview board	DS-C66S-PRE	1 HDMI output port
Electrical LED controller board	DS-C66S-20NO	20 Gigabit Ethernet ports
Optical LED controller board	DS-C66S-16NO/2FO	16 Gigabit Ethernet ports + two 10 Gbps optical ports
Power module	DS-C66S-PWR	Redundant power module, the chassis comes standard with 1 power module, and the 12-slot chassis supports 1 additional power module purchased separately.

Specification

DS-C66S Series Video Wall Controller			
Model		**DS-C66S-S6**	**DS-C66S-S12**
Device	Power Interface	100 VAC to 240 VAC, 50/60 Hz	100 VAC to 240 VAC, 50/60 Hz
	Dimensions (W × H × D)	442 mm × 88.1 mm × 385 mm (17.40 inch × 3.47 inch × 15.16 inch)	442 mm × 177 mm × 385 mm (17.40 inch × 6.97 inch × 15.16 inch)
	Chassis Height	2 U	4 U
	Main Control Board Slot	1	1
	Installed Main Control Boards	1	1
	Installed Power Supplies	1	1
	Power Consumption (Full Configuration)	≤240 W	≤ 550W
Chassis	Bus Type	Network switching	Network switching
	Main Control Board Slot	1	1
	Service Board Slot	6	12
	Net Weight (Full Configuration)	8.8 kg(19.4 lb), full configuration, chassis 5.8 kg(12.79 lb), each sub-board 0.5 kg(1.1 lb)	16.28 kg(35.89 lb), full configuration, chassis 10.28 kg(22.67 lb), each sub-board 0.5 kg(1.1 lb)
	Gross Weight (Full Configuration)	11.75 kg(25.9 lb), full configuration, chassis 5.8 kg(12.79 lb), each sub-board 0.5 kg(1.1 lb)	19.28 kg(42.51 lb), full configuration, chassis 10.28 kg(22.67 lb), each sub-board 0.5 kg(1.1 lb)
Environment	Working Temperature	0 °C to 50 °C	
	Working Humidity	10% RH to 90% RH, no condensation	
Main Control Board (DS-C66S-MCU)	USB Interface	1 × USB 2.0	
	Control Network Port	1 × 1000 Mbps Ethernet port (RJ-45)	
	Audio Input Interface	2 × 3.5 mm audio	
	Audio Output Interface	2 × 3.5 mm audio	
	Serial Interface	1 × Console port (RJ-45, baud rate: 115200) + 1 × RS-485/RS-232 port (RJ-45)	
	Genlock Interface	1 input + 1 loop-through output	
HDMI Input Board (DS-C66S-04HI)	Audio Input Interface	4 × in-band audio	
	Audio Sampling Rate	32/44.1/48 kHz	
	Audio Channel	Dual channel	
	Input Frame Rate	24 Hz to 60 Hz	
	HDCP	Supports HDCP 1.4 with backward compatibility to HDCP 1.3	
	Video Input Interface Type	HDMI 1.4	
	Video Input Interfaces	4	
	Video Input Resolution	1024 × 768@60 Hz, 1280 × 1024@60 Hz, 1366 × 768@60 Hz, 1440 × 900@60 Hz, 1680 × 1050@60 Hz, 1280 × 960@60 Hz, 1600 × 1200@60 Hz, 1280 × 720P@50 Hz, 1280 × 720P@60 Hz, 1920 × 1080P@25 Hz, 1920 × 1080P@30 Hz, 1920 × 1080P@50 Hz, 1920 × 1080P@60 Hz, 1920 × 1200@60 Hz Custom resolution range: Width: 800 to 2560, height: 600 to 2560 (width aligned to 4, height aligned to 2), frame rate: 30/60 Hz. At 30 Hz: Resolution range 1280 × 720 ~ 2048 × 1152.	

		At 60 Hz: Resolution range 800 × 600 ~ 2048 × 1152.
	Max. Video Input Resolution	1080p
DVI Input Board (DS-C66S-04DI)	Input Frame Rate	24 Hz to 60 Hz
	HDCP	Supports HDCP 1.4 with backward compatibility to HDCP 1.3
	Video Input Interface Type	DVI-D
	Video Input Interfaces	4
	Video Input Resolution	1024 × 768@60 Hz, 1280 × 1024@60 Hz, 1366 × 768@60 Hz, 1440 × 900@60 Hz, 1680 × 1050@60 Hz, 1280 × 960@60 Hz, 1600 × 1200@60 Hz, 1280 × 720p@50 Hz, 1280 × 720p@60 Hz, 1920 × 1080p@50 Hz, 1920 × 1080p@60 Hz, 1920 × 1200@60 Hz Custom resolution range: Width: 800 to 2560, height: 600 to 2560 (width aligned to 4, height aligned to 2), frame rate: 30/60 Hz. At 30 Hz: Resolution range 1280 × 720 ~ 2048 × 1152. At 60 Hz: Resolution range 800 × 600 ~ 2048 × 1152.
	Max. Video Input Resolution	1080p
4K HDMI Input Board (DS-C66S-02HI/4K)	Audio Input Interface	2 × in-band audio
	Audio Sampling Rate	32/44.1/48 kHz
	Audio Channel	Dual channel
	HDR	Supports HDR10, compliant with SMPTE ST 2084/SMPTE ST 2086 standards. Supports HLG.
	HDCP	Supports HDCP 2.3, with backward compatibility to HDCP 2.2/HDCP 1.4/HDCP 1.3.
	Video Input Interface Type	HDMI 2.0
	Video Input Interfaces	2
	Video Input Resolution	4096 × 2160@60 Hz, 4096 × 2160@30 Hz, 3840 × 2160@60 Hz, 3840 × 2160@30 Hz, 1920 × 1200@60 Hz, 1920 × 1080p@60 Width: 800 to 8192, height: 600 to 8192 (width aligned to 4, height aligned to 2), frame rate: 30/60 Hz. At 30 Hz: Resolution range 1920 × 1080 ~ 4096 × 2160. At 60 Hz: Resolution range 800 × 600 ~ 4096 × 2160.
	Max. Video Input Resolution	4K60
4K DP Input Board (DS-C66S-02DPI/4K)	Audio Input Interface	2 × in-band audio
	Audio Sampling Rate	32/44.1/48 kHz
	Audio Channel	Dual channel
	HDR	Supports HDR10, compliant with SMPTE ST 2084/SMPTE ST 2086 standards. Supports HLG.
	HDCP	Supports HDCP 2.3, with backward compatibility to HDCP 2.2/HDCP 1.4/HDCP 1.3.
	Video Input Interface Type	DP 1.2
	Video Input Interfaces	2
	Video Input Resolution	4096 × 2160@60 Hz, 4096 × 2160@30 Hz, 3840 × 2160@60 Hz, 3840 × 2160@30 Hz, 1920 × 1200@60 Hz, 1920 × 1080p@60 Hz Width: 800 to 8192, height: 600 to 8192 (width aligned to 4, height aligned to 2), frame rate: 30/60 Hz. At 30 Hz: Resolution range 1920 × 1080 ~ 4096 × 2160.

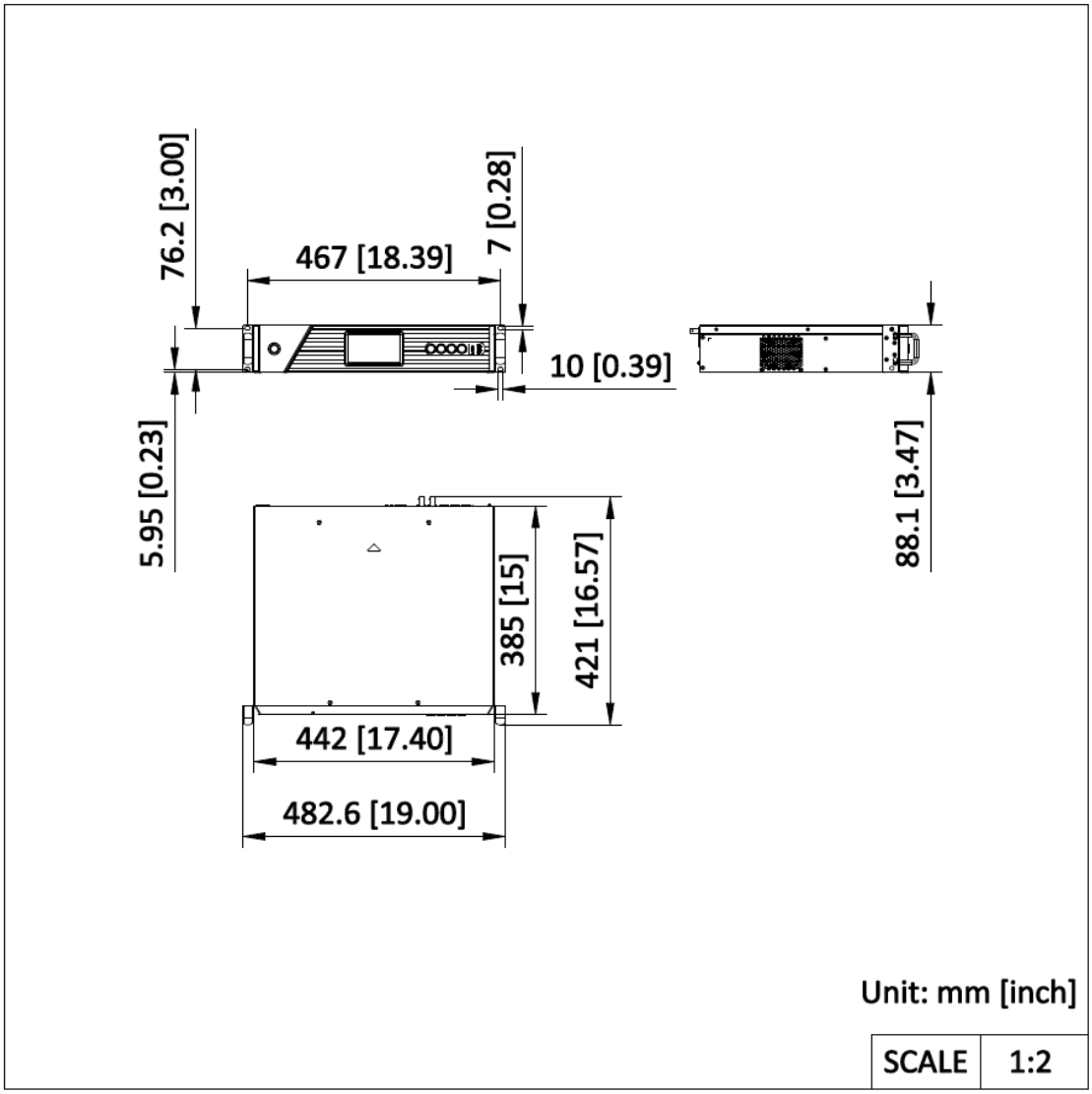
		At 60 Hz: Resolution range 800 × 600 ~ 4096 × 2160.
	Max. Video Input Resolution	4K60
4K SDI Input Board (DS-C66S-04SDI/4K)	Input Frame Rate	25 Hz to 60 Hz
	HDR	Supports HDR10, compliant with SMPTE ST 2084/SMPTE ST 2086 standards. Supports HLG.
	Audio Input Interface	4 × in-band audio
	Audio Sampling Rate	32/44.1/48 kHz
	Audio Channel	Dual channel
	Video Input Interface Type	12G-SDI
	Video Input Interfaces	4 (4 input +4 loop-through output)
	Video Input Resolution	Supports ST-2082 (12G), ST-2081 (6G), ST-424 (3G), and ST-292 (HD) standard video input. Supports 3G-Level A/Level B (DS mode).
	Max. Video Input Resolution	4K60
HDMI Output Board (DS-C66S-04HO)	Layers	16 layers of 2K/4K per port
	Audio Sampling Rate	48 kHz
	Audio Output Interfaces	4
	Audio Output Interface Type	HDMI composite audio
	Video Output Interface Type	HDMI 1.4
	Video Output Interfaces	4
	Video Output Resolution	1920 × 1200@60 Hz, 1600 × 1200@60 Hz, 1920 × 1080@60 Hz, 1680 × 1050@60 Hz, 1280 × 720@60 Hz, 1280 × 1024@60 Hz, 1024 × 768@60 Hz Supports LED screen, custom resolution output, 60 Hz loading output, and 2.6 MP loading with width ranging from 144 to 3840 and height ranging from 144 to 2160.
	Max. Video Output Resolution	1080p
	Loading Capacity for Video Output to LED	Single port load 2.6 MP, Width 144 - 3840, Height 144 - 2160
DVI Output Board (DS-C66S-04DO)	Layers	16 layers of 2K/4K per port
	Audio Sampling Rate	48 kHz
	Video Output Interface Type	DVI-D
	Video Output Interfaces	4
	Video Output Resolution	1920 × 1200@60 Hz, 1600 × 1200@60 Hz, 1920 × 1080@60 Hz, 1680 × 1050@60 Hz, 1280 × 720@60 Hz, 1280 × 1024@60 Hz, 1024 × 768@60 Hz Supports LED screen, custom resolution output, 60 Hz loading output, and 2.6 MP loading with width ranging from 144 to 3840 and height ranging from 144 to 2160.
	Max. Video Output Resolution	1080p
	Loading Capacity for Video Output to LED	Single port load 2.6 MP, Width 144 - 3840, Height 144 - 2160
4K HDMI Output Board (DS-C66S-02HO/4K)	Layers	16 layers of 2K/4K per port
	Audio Sampling Rate	48 kHz
	Audio Output Interface	2 × in-band audio
	Video Output Interface Type	HDMI 2.0
	Video Output Interfaces	2

	Video Output Resolution	4096 × 2160@60 Hz, 3840 × 2160@60 Hz, 4096 × 2160@30 Hz, 3840 × 2160@30 Hz, 2560 × 1600@60 Hz, 2560 × 1440@60 Hz, 1920 × 1200@60 Hz, 1920 × 1080@60 Hz Supports LED screen, custom resolution output, 60 Hz loading output, and 8.84 MP loading with width ranging from 144 to 8192 and height ranging from 144 to 4320. Width must be aligned to 4.
	Max. Video Output Resolution	4K60
	Loading Capacity for Video Output to LED	Single port load 8.84 MP, Width 144 - 8192, Height 144 - 4320
Preview board (DS-C66S-PRE)	Occupied Slot	Output slot
	Video Wall Live View	Supported (16-channel D1 or 32CIF)
	Video Wall Preview	1channel of 1080p60 local preview 1 channel of 1080p30 client-based preview
Decoding board (DS-C66S-DEC)	Occupied Slot	Input slot
	Video Decoding Format	H.264, H.265, Smart264, Smart265, MJPEG
	Video Decoding Channels	48
	Video Decoding Capability	Supports 48 channels of 720P30, or 24 channels of 1080P30, or 12 channels of 4MP, or 8 channels of 6MP, or 4 channels of 8MP, or 2 channels of 12MP, or 2 channels of 16MP, or 1 channel of 24MP, or 1 channel of 32MP.
	Audio Decoding Channels	48
	Audio Decoding Format	G711-A, G711-U, G722.1, G726-16/U, MPEG, AAC-LC
Electrical LED controller board (DS-C66S-20NO)	Layers	64 layers of 2K/4K per board
	HDR	Supports HDR10, compliant with SMPTE ST 2084/SMPTE ST 2086 standards. Supports HLG.
	Video Output Interface Type	RJ-45
	Video Output Interfaces	20
	Video Output Resolution	Custom resolution range: Loading resolution must be smaller than 10.4 MP. Width: 64 to 16384 (width aligned to 4), Height: 64 to 8192
	Max. Video Output Resolution	10400000
	Loading Capacity for Video Output to LED	Single port load: 10400000, Width 64 - 16384, Height 64 - 8192
Optical LED controller board (DS-C66S-16NO/2FO)	Layers	64 layers of 2K/4K per board
	HDR	Supports HDR10, compliant with SMPTE ST 2084/SMPTE ST 2086 standards. Supports HLG.
	Video Output Interface Type	RJ-45/SFP+
	Video Output Interfaces	16 (RJ-45)/2 (SFP+)
	Video Output Resolution	Custom resolution range: Loading resolution must be smaller than 10.4 MP. Width: 64 to 16384 (width aligned to 4), Height: 64 to 8192
	Max. Video Output Resolution	10400000
	Loading Capacity for Video Output to LED	Single port load: 10400000, Width 64 - 16384, Height 64 - 8192
Power module (DS-C66S-PWR)	Working Voltage	100 VAC to 240 VAC, 50/60 Hz
	Power Interface	1

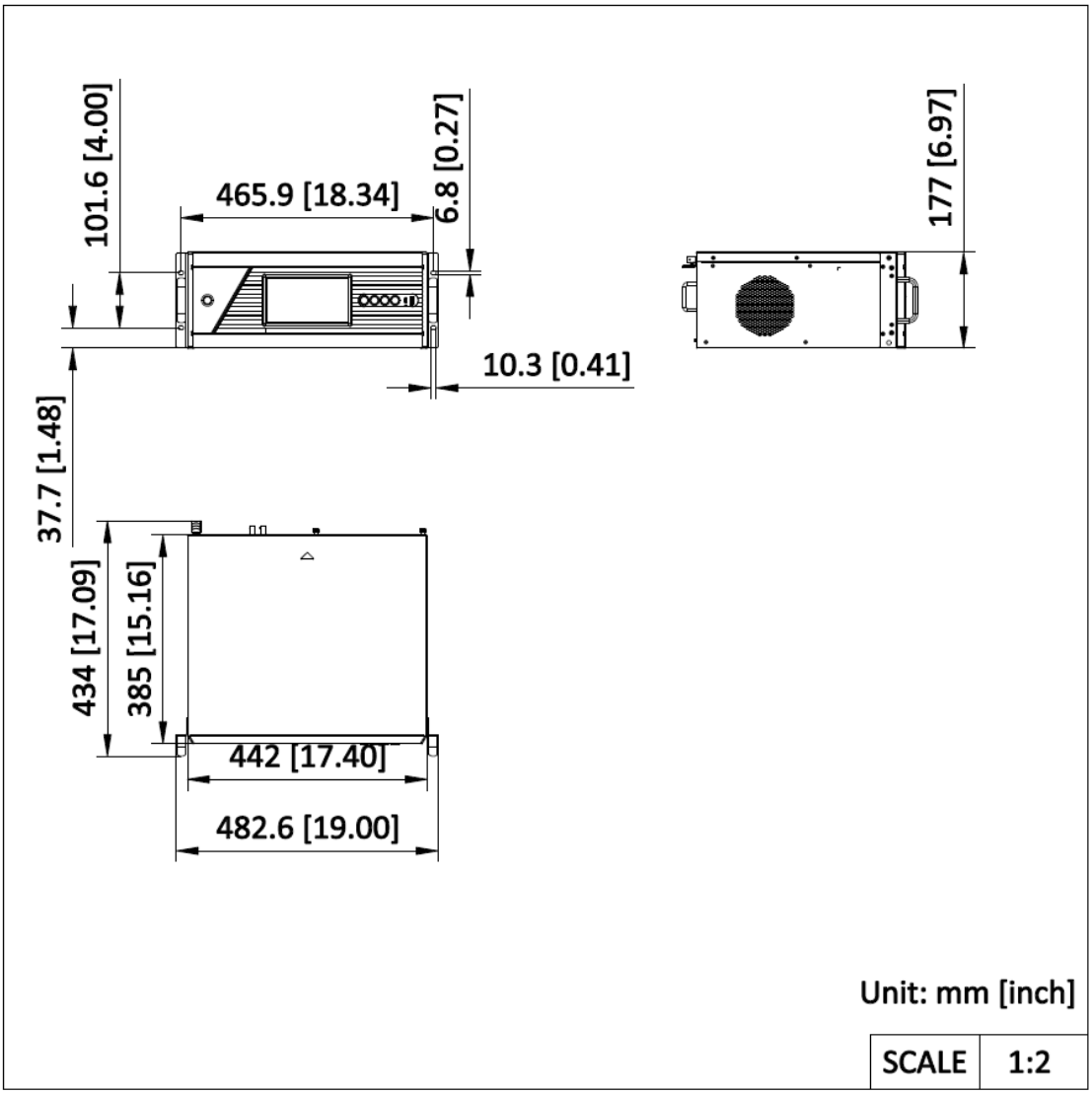
	Working Frequency	50 Hz to 60 Hz
	Working Current	5.5A MAX
	Output Power	550 W
	Overcurrent Protection	Supported

Dimension

DS-C66S-S6



DS-C66S-S12


101.6 [4.00]
465.9 [18.34]
6.8 [0.27]
177 [6.97]
10.3 [0.41]
37.7 [1.48]
434 [17.09]
385 [15.16]
442 [17.40]
482.6 [19.00]
Unit: mm [inch]
SCALE
1:2

See Far, Go Further

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