



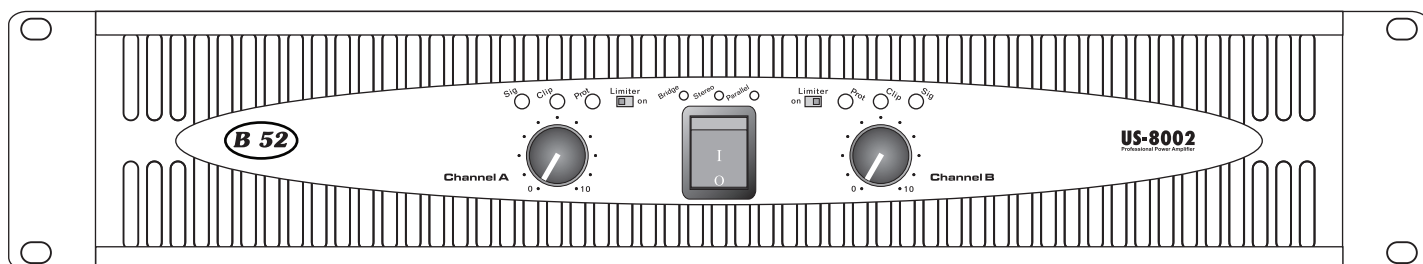
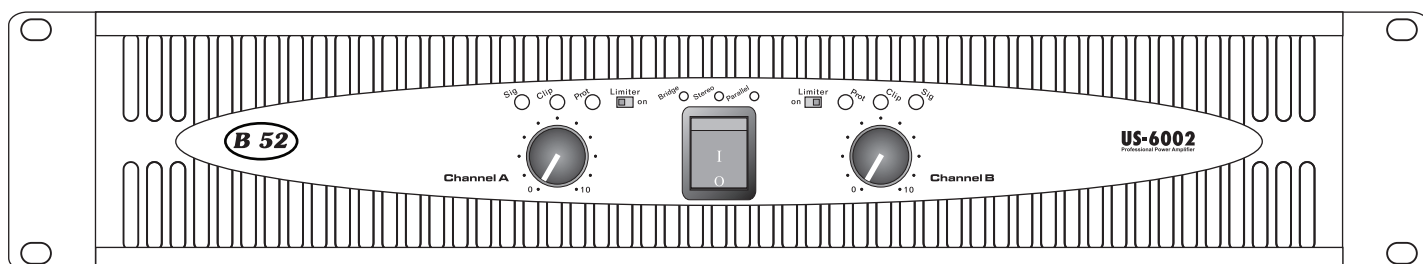
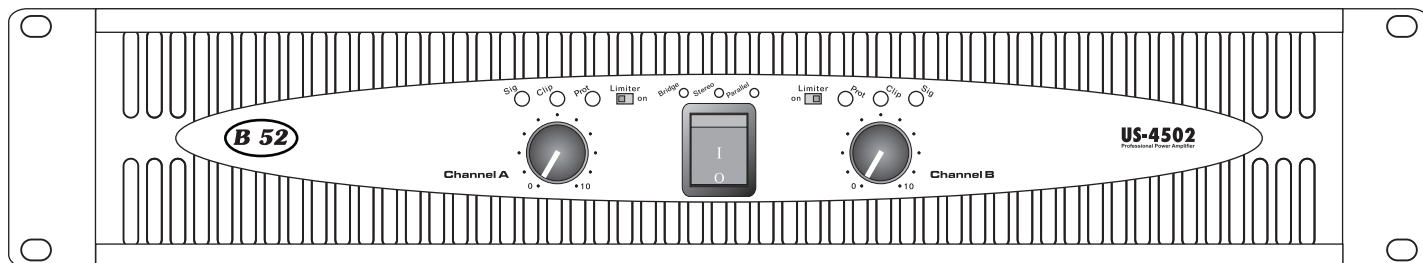
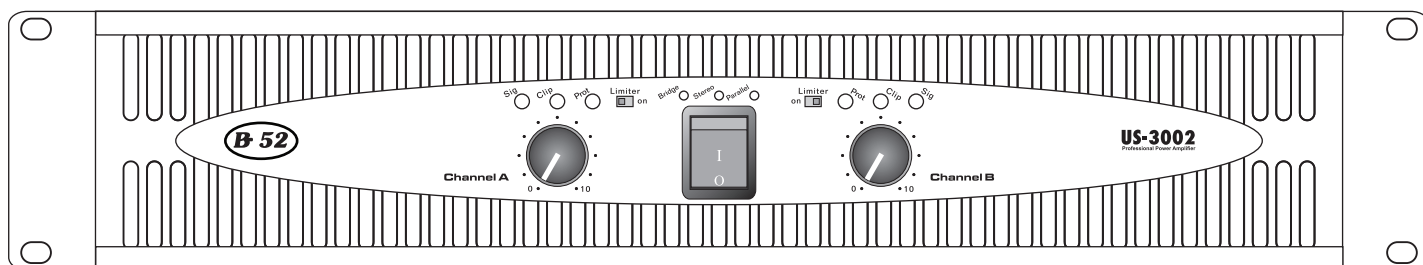
# US-SERIES PROFESSIONAL POWER AMPLIFIERS

**US-3002**

**US-6002**

**US-4502**

**US-8002**



**OPERATION MANUALS**



Intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons



Intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

**CAUTION: Risk of electrical shock -DO NOT OPEN**

**CAUTION:** To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside  
Refer servicing to qualified service personnel.

**WARNING: To prevent electrical shock or fire hazard, do not expose this appliance to rain or moisture. Before using this appliance, read the operating guide for further warnings.**



#### **WARNING!**

For optimum performance and reliability DO NOT PRESENT THE AMPLIFIER WITH A SPEAKER LOAD OF LESS THAN 2 OHMS. OR A COMBINATION OF SPEAKERS THAT TOGETHER ARE LESS THAN 2 OHMS!

Using one speaker, it must be rated at 2 ohms minimum.

Using two speakers, they must be rated each at 4 ohms minimum.

Using three speakers, they must be rated each at 8 ohms minimum.



#### **AVIS !**

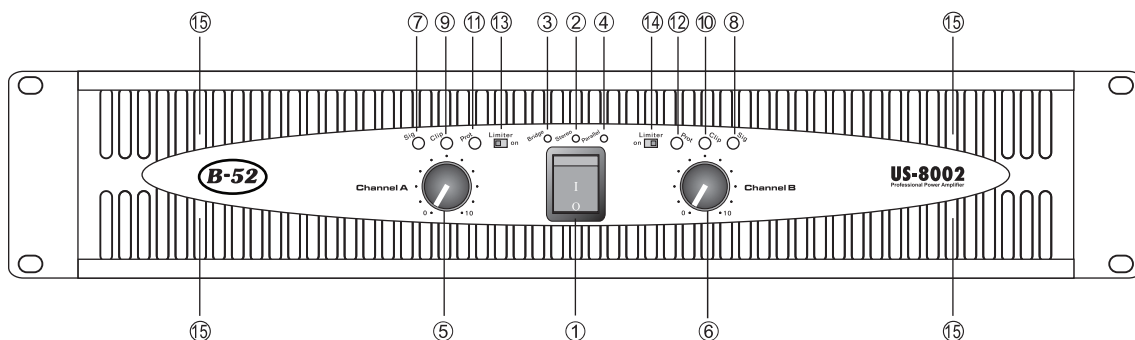
Pour assurer la Fiabilité et obtenir une performance optimale, ne soumettez jamais l'amplificateur à une charge d'impédance totale inférieure à 2 ohms, ni avec un H.P. ni en combinaison des H.P.

AVEC un H.P., il faut une charge d'impédance minimum de 2 ohms.

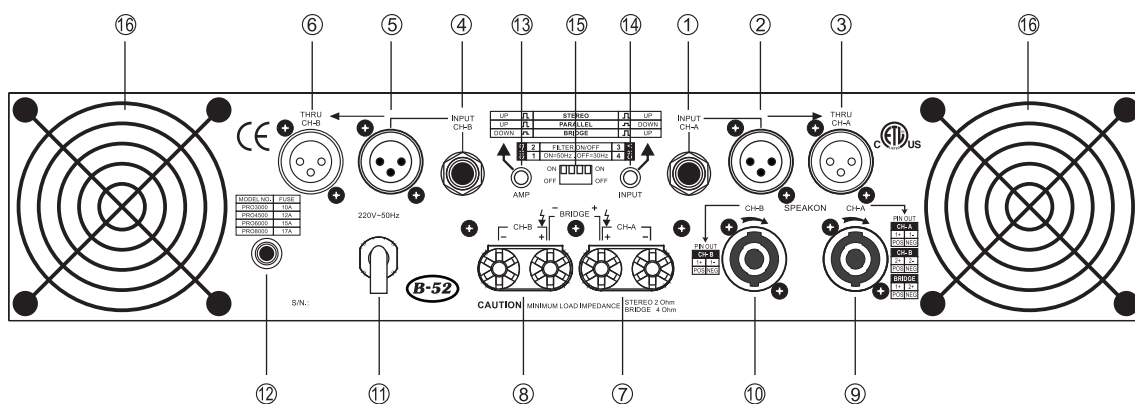
AVEC deux H.P., il faut pour chacun une charge d'impédance minimum de 4 ohms.

AVEC trois H.P., il faut pour chacun une charge d'impédance minimum de 8 ohms.

FRONT PANEL.....	2	INPUT FILTER.....	4
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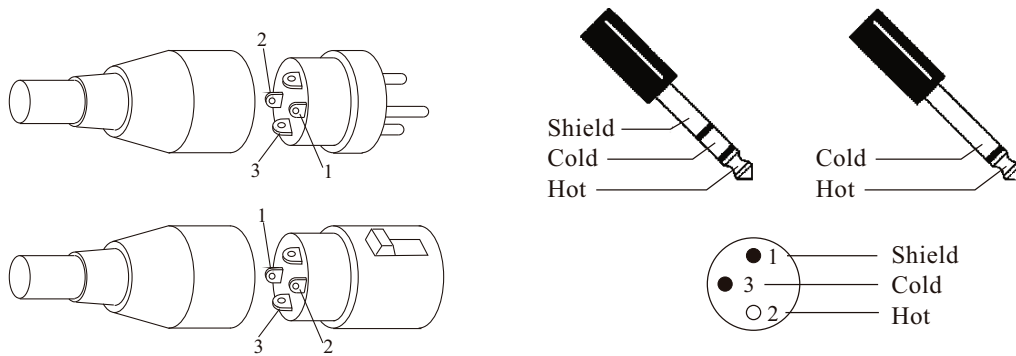
- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| 1. POWER SWITCH                     | 9. CLIP INDICATOR LED (CHANNEL A)     |
| 2. STEREO INDICATOR                 | 10. CLIP INDICATOR LED (CHANNEL B)    |
| 3. BRIDGE INDICATOR LED             | 11. PROTECT INDICATOR LED (CHANNEL A) |
| 4. PARALLEL INDICATOR LED           | 12. PROTECT INDICATOR LED (CHANNEL B) |
| 5. GAIN CONTROL (CHANNEL A)         | 13. LIMITER SWITCH (CHANNEL A)        |
| 6. GAIN CONTROL (CHANNEL B)         | 14. LIMITER SWITCH (CHANNEL B)        |
| 7. SIGNAL INDICATOR LED (CHANNEL A) | 15. COOLING VENTS                     |
| 8. SIGNAL INDICATOR LED (CHANNEL B) |                                       |



- |                                    |                                |
|------------------------------------|--------------------------------|
| 1. TRS INPUT (CHANNEL A)           | 9. SPEAKON OUTPUT (CHANNEL A)  |
| 2. XLR INPUT (CHANNEL A)           | 10. SPEAKON OUTPUT (CHANNEL B) |
| 3. THRU OUTPUT (CHANNEL A)         | 11. AC CORD                    |
| 4. TRS INPUT (CHANNEL B)           | 12. POWER RESET                |
| 5. XLR INPUT (CHANNEL B)           | 13. AMP MODE SWITCH            |
| 6. THRU OUTPUT (CHANNEL B)         | 14. INPUT MODE SWITCH          |
| 7. BINDING POST OUTPUT (CHANNEL A) | 15. LOW CUT FUNCTION SWITCH    |
| 8. BINDING POST OUTPUT (CHANNEL B) | 16. FAN & FILTER COVER         |

## Inputs

Two input connectors, XLR jack and 6.3mm(1/4") TRS jack for both balance/unbalance.



## THRU

Plug the signal source outputs into first amplifier's input, patch from the amplifier's thru jacks to the next amplifier's input, and so on, raising- chaining as many amplifier's as there is no excessive level loss.

## OUTPUT

Strip back insulation 13-mm. insert wire fully, tighten barrel.



## Clip Limiter

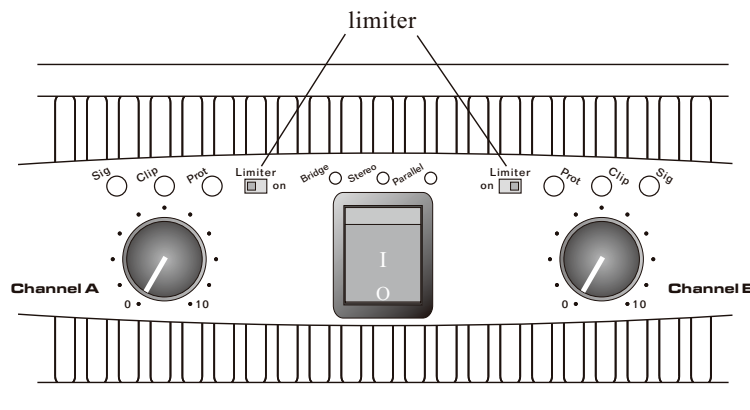
### WHAT IT IS

When the audio signal drives the Amp's output circuit beyond its power capability, it clips, flattening the peaks of the waveform. The clip limiter detects this and reduces the gain to minimize the amount of overdrive. To preserve as much of the program dynamics as possible, limiting reduces the average program level until peaks barely clip. Each channel has its own clip limiter, and you can switch it on or off independently, as shown at front panel.

### WHEN TO USE IT (OR NOT)

When driving full-range speakers, clip limiting reduces high frequency distortion caused by bass overloads. It also protects higher frequency drivers from excess overdrive and harsh clipping harmonics. When driving subwoofers, some users let the amplifier clip without limiting because it gives extra "punch" to kick drums and similar sounds.

**CAUTION:** In bi-amp systems excessive limiting will affect the frequency balance.



## Input filter

### WHAT IT IS

The low-frequency (LF) Filter rolls signals below either 30Hz or 50Hz. This improves bass performance by limiting sub-audio cone motion, making more power available for the speaker's rated frequency range. The filter settings for each channel are controlled individual through the DIP switch settings shown. When the filter is turned off, a 5Hz roll off protects against DC or deep sub-audio inputs

### WHEN TO USE IT (OR NOT)

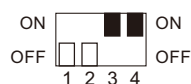
As a rule, your speakers will sound better with proper filtering. Unless you already have filtering in a preceding device, match the setting to the low frequency rating of your speakers. Vented (bass reflex, ported, etc.) speakers are especially sensitive to cone over-excursion at frequencies below their rated limit. The 50Hz filter works well with most compact full-range speakers, and has a slight boost at 100Hz for greater fullness. The 30Hz filter is intended for subwoofers and large full-range cabinets.

The "off" position should be used only for applications such as studio playback monitoring, where you need to know if there are unwanted sub-audio signals present in your mix.

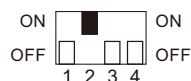
#### DIP Switch settings



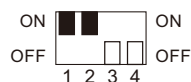
**CH-A** Low cut filter ON cut point 30Hz



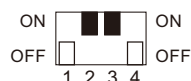
**CH-A** Low cut filter ON cut point 50Hz



**CH-B** Low cut filter ON cut point 30Hz



**CH-B** Low cut filter ON cut point 50Hz



**CHA & CH-B** Low cut filter ON cut point 30Hz



**CHA & CH-B** Low cut filter ON cut point 50Hz

## Parallel input mode

### WHAT IT IS

"Parallel input" switches let you operate the amplifier in parallel mode, delivering the same signal to both channels without using a Y-cable. Each channel drives its own speaker load, with independent gain, filtering, and clip limiting. Set amp switch "Up", input switch "Down". With the inputs in parallel, and only one input signal, you can use the other set of input connectors to carry the signal to other amps. This is called "THRU".

### WHEN TO USE IT

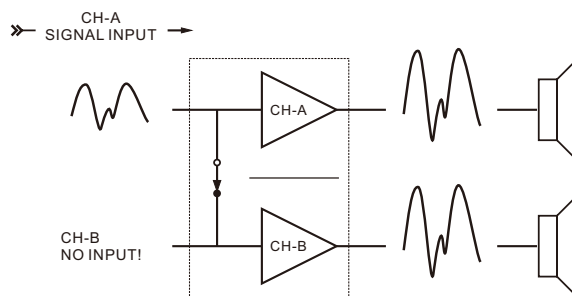
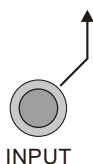
Parallel the inputs when driving two speakers with one input signal (parallel mode) while keeping separate Control of both channel's gain, filtering, and limiting. Use them in bridged mono mode to patch the signal to additional amplifiers through the extra input jacks.

**NOTE: If you are using a balanced signal, use only balanced patch cables; even one unbalanced cable will unbalance the entire signal chain, possibly causing hum.**

**NOTE: Turn off the "parallel input" switches when feeding the amp two separate signals.**

#### Parallel mono mode

UP	STEREO	UP
UP	PARALLEL	DOWN
DOWN	BRIDGE	UP



## Bridge mono mode

### WHAT IT IS

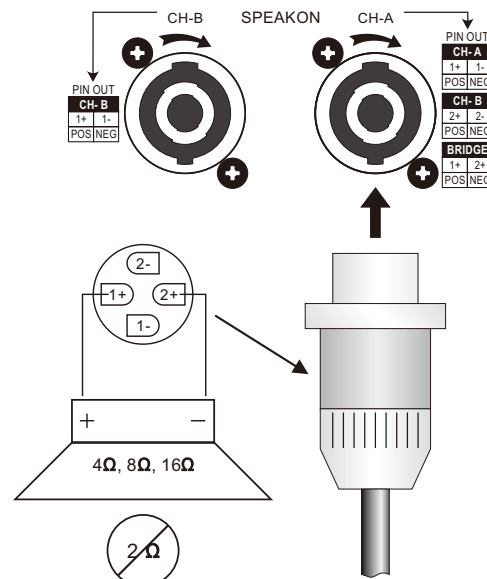
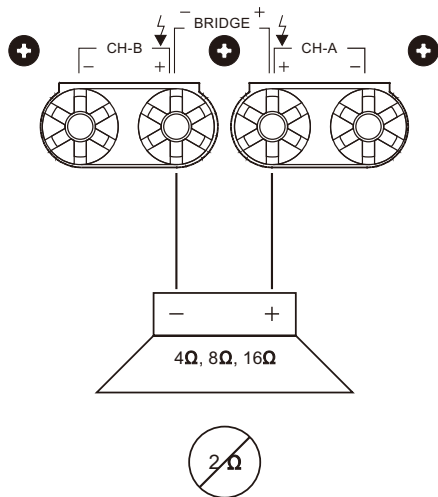
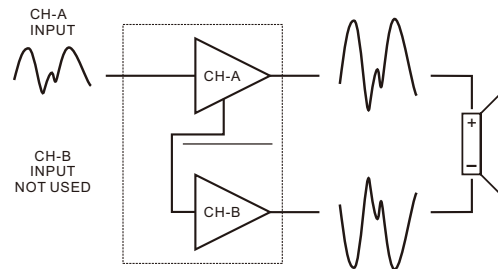
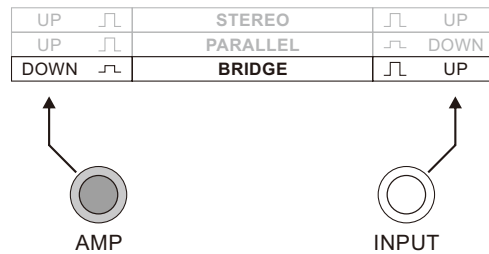
Bridged mono combines the power of both amp channels into one speaker, resulting in twice the voltage swing, four times the peak power, and approximately three times the sustained power of a single channel. This mode uses channel A's input, gain control, input filter, and clip limiter, Channel B's should not be used.

### WHEN TO USE IT (OR NOT)

Use bridged mono to deliver the power of both channels to a single 8- or 4- Ohm load. Set amp switch "Down", Set input switch "Up"

**BRIDGED-MONO PRECAUTIONS:** This mode puts a high demand on the amplifier and speaker. Excessive clipping may cause protective muting or speaker damage. Be sure the speaker has a sufficient power rating.

## Bridge mono mode



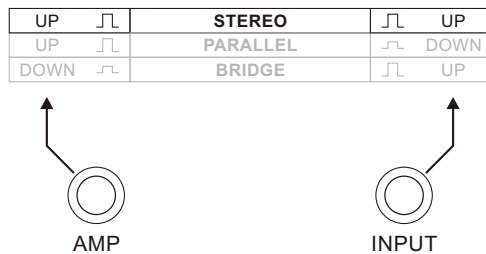
### Precaution

If the load is 4 Ohms or less and prolonged overloads occur, the amplifier will probably mute for several seconds during peaks, and the circuit Breaker may trip. Do not use 2 Ohm loads.

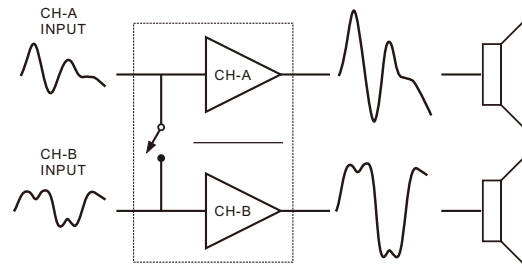
## STEREO MODE

This is the "normal" way of using the amplifier, in which each channel is fully independent. Separate signals connect at the inputs, the gain knobs control their respective channels, and separate speakers connect to each output. Set amp switch "UP", Input Switch "UP"

### Bridge mono mode



### STEREO, BI-AMP, 2-CHANNEL



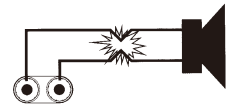
## PROTECTION

### 1. TURN-ON / TURN-OFF MUTING

The amplifier output are muted for couple of seconds after turn-on, and immediately at turn-off

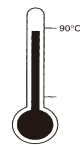
### 2. SHORT CIRCUIT PROTECTION:

The output short circuit protects the output devices from short circuits and stressful loads.



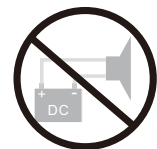
### 3. THERMAL PROTECTION:

A variable-speed fan provides adequate cooling airflow. But if the heat sink temperature should climb above 90 c, the output will mute until the amplifier cools down.



### 4. DC FAULT

The outputs will mute if dc or excessive subsonic energy appears at them.



### 5. INPUT / OUTPUT PROTECTION:

The input circuits are insulated by 10K Resistors. An ultrasonic network decouples RF from the output and helps keep the amplifier stable with reactive loads.

## SPECIFICATIONS

	US-3002	US-4502	US-6002	US-8002
R.M.S. Output Power 2 Ch Driven 2ohms/4ohms/8ohms 1KHz 1% THD	2ohms 570W 4ohms 490W 8ohms 300W	2ohms 1050W 4ohms 725W 8ohms 440W	2ohms 1100W 4ohms 960W 8ohms 600W	2ohms 1460W 4ohms 1280W 8ohms 800W
R.M.S. Output Power Bridged Mono 4ohms/8ohms 1KHz 1% THD	1140W/980W	2100W/1450W	2200W/1920W	2920W/2560W
Input Sensitivity	0.775V	0.775V	0.775V	0.775V
Frequency Response	±0.2dB	±0.2dB	±0.2dB	±0.2dB
Total Harmonic Distortion	<0.02%	<0.01%	<0.01%	<0.025%
Crosstalk	>70dB	>70dB	>70dB	>60dB
Damping Factor	>500	>500	>560	>600
Signal To Noise Ratio below rated power 20Hz to 20kHz, A-Weighted	>100dB	>100dB	>100dB	>100dB
Power Consumption @ Maximum Output Power 8ohms	650W 5.91A@110V	990W 9A@110V	1370W 12.45A@110V	1900W 17.27A@110V
Output Circuitry	CLASS AB	CLASS AB	CLASS H	CLASS H
Cooling System	Dual 2-Speed Fans	Dual 2-Speed Fans	Dual 2-Speed Fans	Dual 2-Speed Fans
Dimensions (H×W×D)	88 x 483 x 332 mm	88 x 483 x 332 mm	88 x 483 x 434 mm	88 x 483 x 434 mm
Weight	13.7kg	14kg	19.4kg	23kg
Rack Space	2U	2U	2U	2U