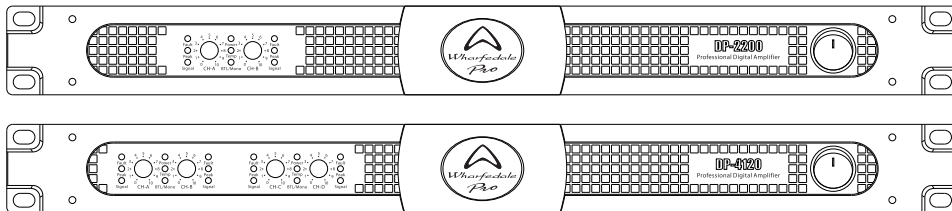


DP SERIES

Professional Power Amplifier

OPERATING MANUAL AND USER GUIDE



Wharfedale
Pro

www.wharfedalepro.com



IMPORTANT WARNINGS & SAFETY INSTRUCTIONS

1. Read these instructions
2. Follow all instructions
3. Keep these instructions
4. Heed all warnings
5. Do not use this apparatus near water
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of a polarised or grounding plug. A polarised plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding blade. The wide blade or the third blade is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at the plug, receptacle and or the point where it exits from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Only use a stand, tripod, bracket or rack specified by the manufacturer, or sold with the apparatus. When a rack is used, use caution when moving the rack and apparatus combination to avoid tip-over or injury.



13. Unplug the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way including but not limited to power supply cord or plug damage, liquid ingress, foreign objects in the chassis, exposure to rain/moisture or impact damage. In addition the unit must be serviced when you experience any abnormal operation.
15. CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not attempt to perform any servicing other than that contained in the operating instructions unless you are qualified to do so. In addition opening the casing will result in your warranty becoming null and void.
16. Do not install this apparatus in a confined space such as a book case or similar unit. Good ventilation should be maintained around the apparatus. Any vents, air-inlets or fans should not be obstructed by objects such as paper, table-cloths, curtains etc.
17. WARNING: To reduce the risk of fire or electric shock, do not expose the apparatus to rain or moisture. The apparatus should not be exposed to dripping or splashing and objects filled with liquids, such as vases, should not be placed on the apparatus.
18. WARNING: The mains plug/appliance coupler is used as a disconnect device, the disconnect device shall remain readily operable.



19. The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of non-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.
 - Warning: To reduce the risk of electric shock, do not remove the cover (or back) as there are no user-serviceable parts inside. Refer servicing to qualified personnel.
 - The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.
20.  (Protective earthing terminal) The apparatus should be connected to a mains socket outlet with a protective earthing connection.
21.  Correct Disposal of this product. This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use local return and collection systems or contact the retailer where the product was purchased. They can take this product for safe environmentally friendly recycling.

INTRODUCTION

Congratulations on the purchase of your DP series professional power amplifier. Wharfedale Pro DP amplifiers are the result of many years of experience in the use, design and manufacture of professional audio equipment.

We take great pride in engineering and building every Wharfedale Pro product and wish to thank you for entrusting us with your sound.

From the time Gilbert Briggs built his first loudspeaker in 1932, to the present day, Wharfedale have maintained the same standard of quality in components, workmanship and performance.

Please take the time to read this manual completely in order to ensure that you get the most from your DP power amplifier.

ABOUT THE DP SERIES

Suitable for professional sound reinforcement or fixed installations, the series feature 5 models that deliver between 760 W and 3400 W per channel into a 4 ohm load in a rugged 1U, 19" rack mount enclosure. An advanced switch mode supply and Class D topology deliver high power with low distortion in a compact size and light weight form factor.









A full suite of protection includes thermal, over-current, DC, short circuit protect and power on/off mute. The DP Series features XLR inputs with a maximum input level of +22 dBu allowing integration with any typical professional audio system. The variable speed fans keep the amplifier rack quiet when not in use. The DP series features 3 different operating modes, parallel, stereo and bridge.

FEATURES

- DP-4035: 595 W*4@4 Ohms (RMS), 350 W*4@8 Ohms (RMS), 1190 W*2@8 Ohms (BTL)
- DP-4065: 1100 W*4@4 Ohms (RMS), 650 W*4@8 Ohms (RMS), 2200 W*2@8 Ohms (BTL)
- DP-4100: 1700 W*4@4 Ohms (RMS), 1000 W*4@8 Ohms (RMS), 3400 W*2@8 Ohms (BTL)
- DP-4120: 2040 W*4@4 Ohms (RMS), 1200 W*4@8 Ohms (RMS), 4080 W*2@8 Ohms (BTL)
- DP-2200: 3400 W*2@4 Ohms (RMS), 2000 W*2@8 Ohms (RMS), 6800 W@8 Ohms (BTL)
- XLR inputs
- 3 operation modes (MONO, STEREO and BRIDGE)
- Power, Protect, Signal and Limiter indicators
- Thermal protect, over current protect, DC protect, output short protect
- Ultra quiet variable speed fans
- Speakon outputs for speaker
- Stable at 2 Ω operation

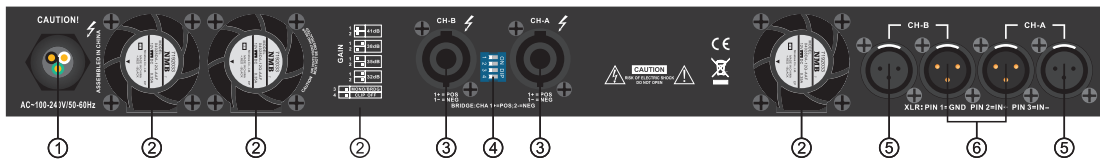
FRONT PANEL FEATURES AND CONTROLS



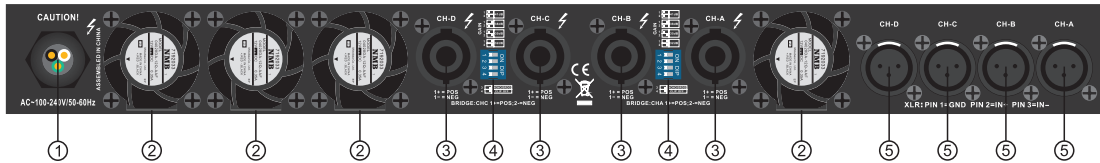
	Icon	function	illustration
1	 Fault	Protection	When there is protection the LED is red.
2	 Peak	Clip	When the output signal is distorted by more than 1%, or when the power is compressed, the LED is yellow
3	 Signal	Signal LED	When the input signal is greater than "-32dB", the LED is green;
4		Volume	Adjust the output amplitude of the amplifier
5	 Temp	Temperature	When the temperature limiter is activated, the LED turns yellow.
6	 BTL/MONO	Mode	When in BTL/MONO mode the LED is yellow.
7	 POWER	Power LED	When the power supply is working the LED is green;
8		Power switch	ON/OFF control. It is ON when " I " is pressed down.

REAR PANEL – FEATURES AND CONTROLS

Rear panel for:DP-2200



Rear panel for:DP-4035/4065/4100/4120



	Icon	function	illustration
1		Power supply input	DP-4120:10A,3X2.5mm ² Power cord; DP-2200、DP-4065、DP-4100:10A,3X1.5mm ² Power cord; DP-4035:10A,3X1.0mm ² Power cord.
2		FAN	Ultra quiet variable speed fans
3		Speakon	In order to enhance the current capacity in the amplifier the 1+ and 2+ have been connected together, the 1- and 2- have been connected together.
4		Gain switch	Set to 41dB, the amplifier voltage gain is 41dB; Set to 38dB, the amplifier voltage gain is 38dB; and so on.
		Mode switch	STEREO Each channel is independant. CHA input signal output from CHA; CHB input signal output from CHB; and so on. MONO/BRDG CHA input signal output from CHA and CHB; CHC input signal output from CHC and CHD.
4		CLIP Switch	Set to ON, the clipping limiter is turned on; Set to OFF, the clipping limiter is turned off.
5		Signal input	Female XLR : Balanced audio input plug
6		Signal input	Male XLR : Balanced audio input plug

QUICK START GUIDE

1. Make sure that the power switch is set at the OFF position while making connections to and from the power amplifier
2. Connect all devices in the signal path and ensure that each connection is secure.
3. Set all level and gain controls to their minimum.
4. After powering up all other devices first, turn the power switch on the amplifier to the 'ON' position and verify that the POWER LED is illuminated.
5. Turn the amplifier volume control up to the "7" setting. (This setting can be adjusted higher or lower, as needed, after set-up). With source signal present start to set each gain stage in your signal path, starting at the beginning of the chain. It is best practice to make overall volume changes with the master fader of your mixing console once the amplifier input trim has been calibrated.
6. When powering down, make sure that the power amplifiers are switched off first.

70 V / 100 V operation.

The following DP amps can deliver power to 70 V or 100 V systems.

DP-2200 : 100 V Hi-Z : 2 x 3400 W : 70 V Hi-Z : 2 x 2400 W

DP-4120 : 100 V Hi-Z : 4 x 2500 W : 70 V Hi-Z : 4 x 2400 W

DP-4100 : 70 V Hi-Z : 4 x 1700 W

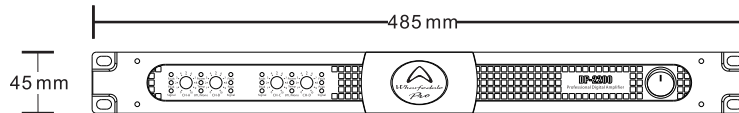
DP-4065 : 70 V Hi-Z : 4 x 1100 W

Simply connect loudspeakers and drive as normal. Because DP amplifiers are Class D, there is no need for any special settings.

It is mandatory to use a loudspeaker type dependent High Pass Filter (typically -10 dB frequency response) and limiter settings for 70 V or 100 V operation.

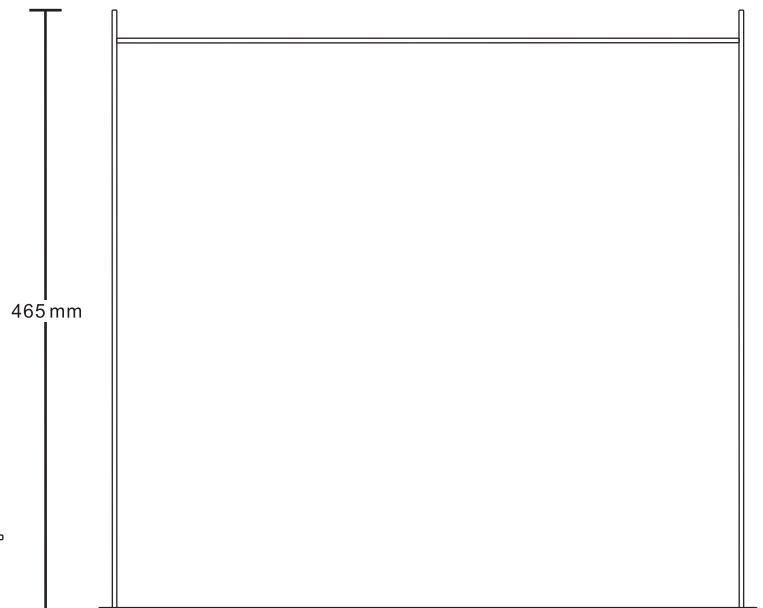
Note - DP-4035 cannot drive Hi-Z systems.

DIMENSIONS



DP-4035
 DP-4065
 DP-4100
 DP-2200

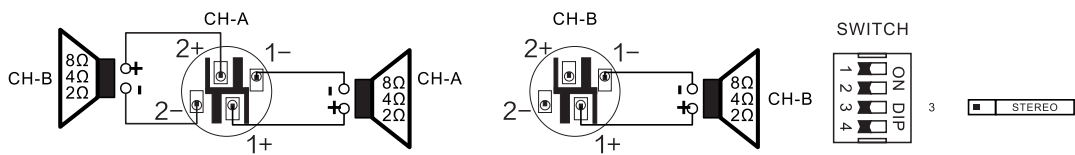
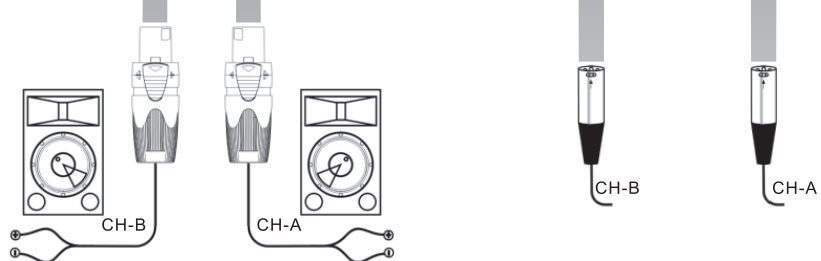
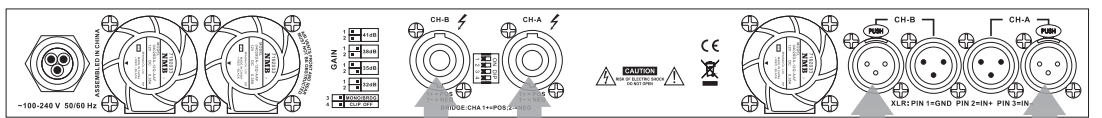
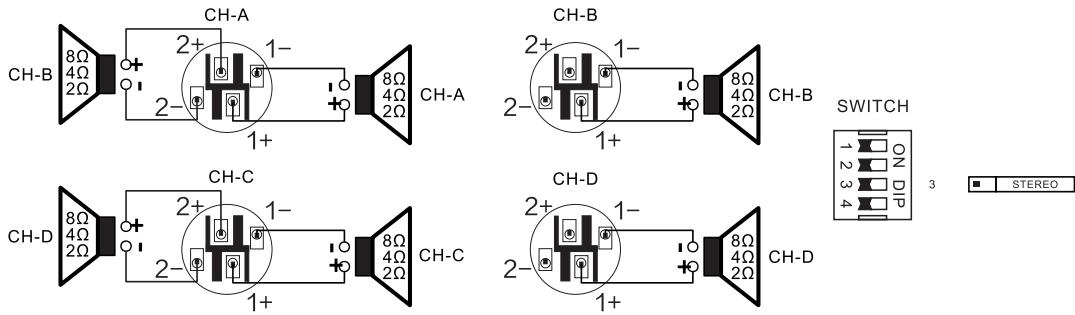
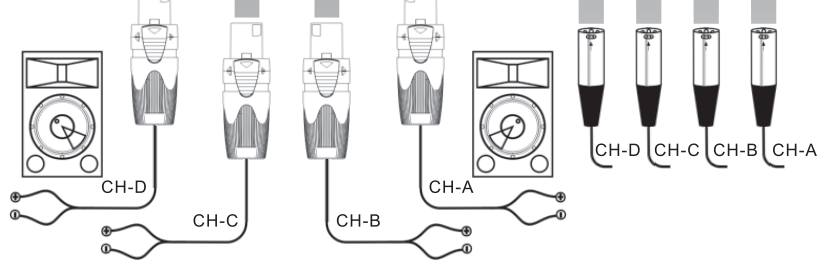
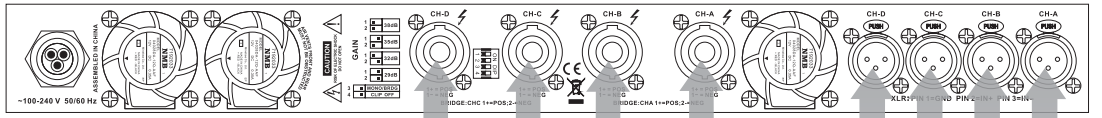
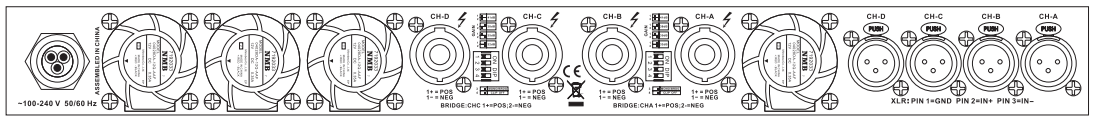
DP-4120



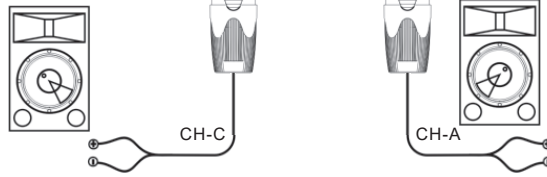
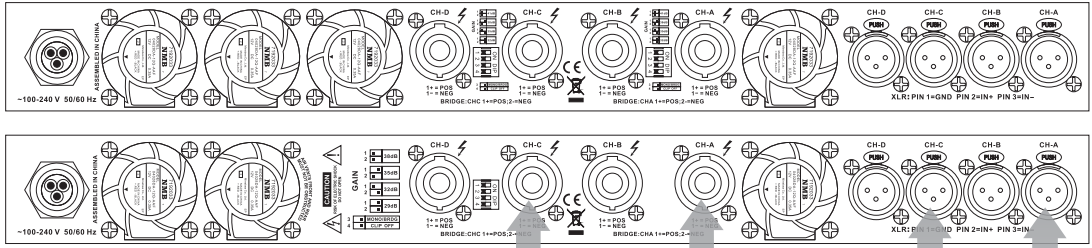
*For reference only

WIRING DIAGRAM

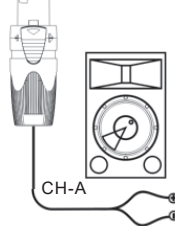
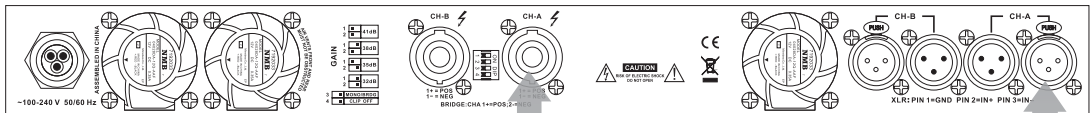
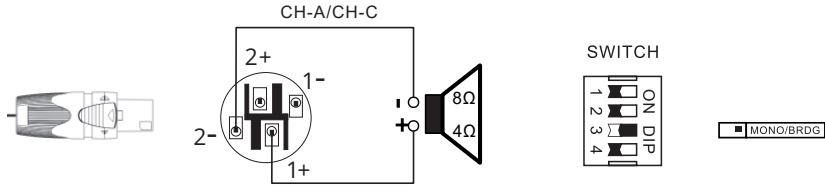
Stereo Mode



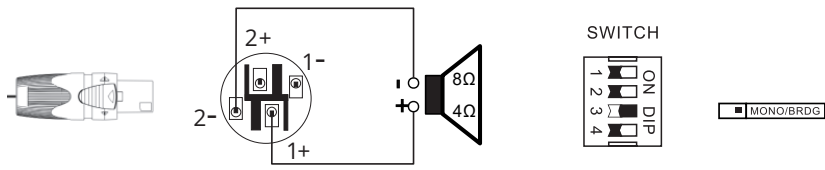
Bridge mode



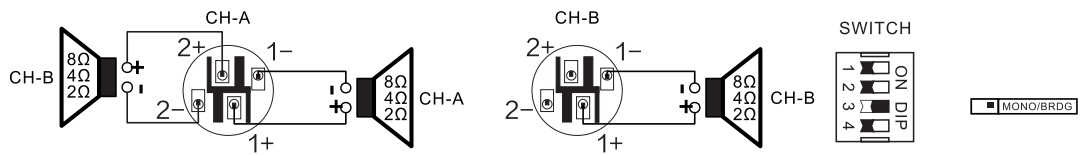
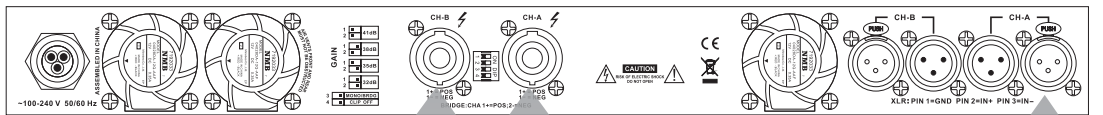
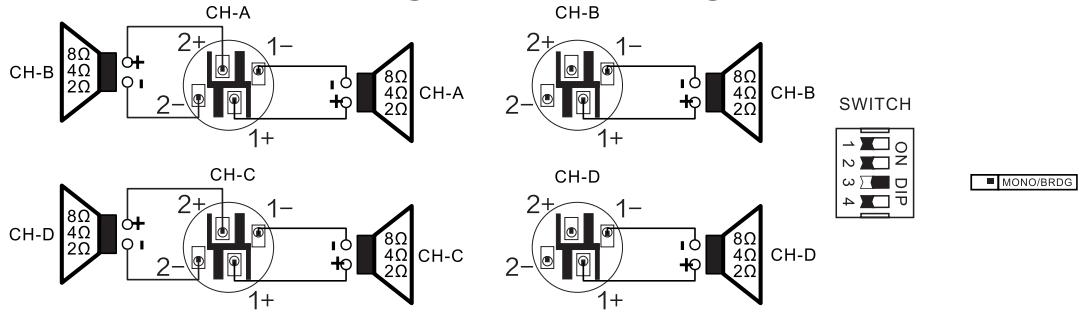
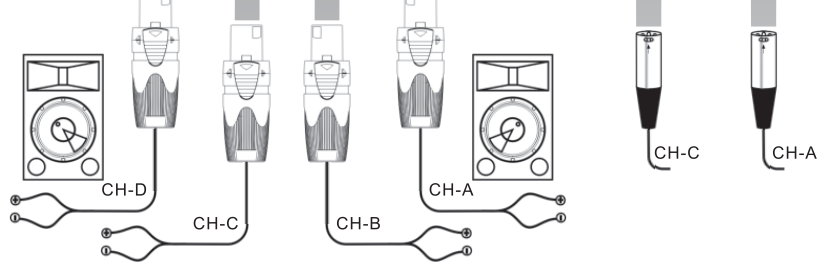
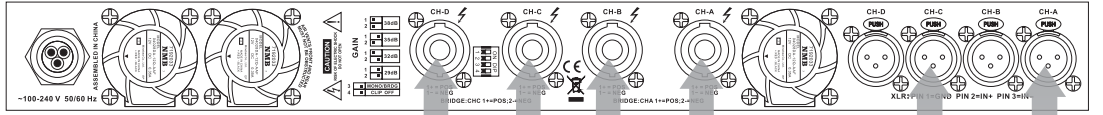
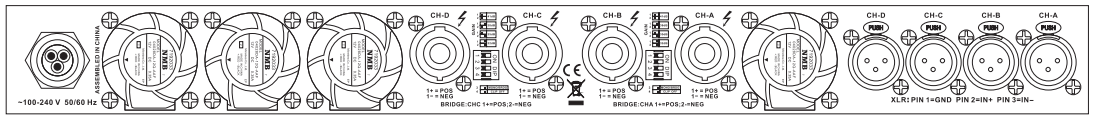
CH-C
CH-A



CH-A



Mono mode



Power consumption and heat

Test signal: Pink Noise, bandwidth limited from 22 Hz to 22 kHz

1/8 power is typical of program material with occasional clipping. Refer to these figures for most applications.

1/3 power represents program material with extremely heavy clipping.

DP-4035

		Line Current(A)		Power(W)			Thermal Dissipation	
	LOAD	220 V	110 V	IN	OUT	Dissipated	Btu/h	kcal/h
standby		0.2	0.4	40.0	0.0	40.0	136.5	34.4
1/8 power	8 Ω/CH	1.1	2.2	243.1	175.0	68.1	232.3	58.5
	4 Ω/CH	1.8	3.7	402.0	297.5	104.5	356.7	89.9
1/3 power	8 Ω/CH	2.6	5.2	576.1	466.7	109.5	373.6	94.1
	4 Ω/CH	4.4	8.8	967.5	793.3	174.1	594.3	149.8

DP-4065

		Line Current(A)		Power(W)			Thermal Dissipation	
	LOAD	220 V	110 V	IN	OUT	Dissipated	Btu/h	kcal/h
standby		0.6	1.3	140.0	0.0	140.0	477.8	120.4
1/8 power	8 Ω/CH	2.1	4.1	451.4	325.0	126.4	431.3	108.7
	4 Ω/CH	3.4	6.8	743.2	550.0	193.2	659.5	166.2
1/3 power	8 Ω/CH	4.9	9.7	1070.0	866.7	203.3	693.8	174.8
	4 Ω/CH	8.1	16.3	1788.6	1466.7	322.0	1098.7	276.9

DP-4100

		Line Current(A)		Power(W)			Thermal Dissipation	
	LOAD	220 V	110 V	IN	OUT	Dissipated	Btu/h	kcal/h
standby		0.7	1.5	160.0	0.0	160.0	546.0	137.6
1/8 power	8 Ω/CH	3.2	6.3	694.4	500.0	194.4	663.6	167.2
	4 Ω/CH	5.2	10.4	1148.6	850.0	298.6	1019.2	256.8
1/3 power	8 Ω/CH	7.5	15.0	1646.1	1333.3	312.8	1067.3	269.0
	4 Ω/CH	12.6	25.1	2764.2	2266.7	497.6	1698.0	427.9

DP-4120

		Line Current(A)		Power(W)			Thermal Dissipation	
	LOAD	220 V	110 V	IN	OUT	Dissipated	Btu/h	kcal/h
standby		0.8	1.5	170.0	0.0	170.0	580.2	146.2
1/8 power	8 Ω/CH	3.8	7.6	833.3	600.0	233.3	796.3	200.7
	4 Ω/CH	6.3	12.5	1378.4	1020.0	358.4	1223.0	308.2
1/3 power	8 Ω/CH	9.0	18.0	1975.3	1600.0	375.3	1280.8	322.8
	4 Ω/CH	15.1	30.2	3317.1	2720.0	597.1	2037.6	513.5

DP-2200

		Line Current(A)		Power(W)			Thermal Dissipation	
	LOAD	220 V	110 V	IN	OUT	Dissipated	Btu/h	kcal/h
standby		0.5	1.0	110.0	0.0	110.0	375.4	94.6
1/8 power	8 Ω/CH	3.2	6.3	694.4	500.0	194.4	663.6	167.2
	4 Ω/CH	5.2	10.4	1148.6	850.0	298.6	1019.2	256.8
1/3 power	8 Ω/CH	7.5	15.0	1646.1	1333.3	312.8	1067.3	269.0
	4 Ω/CH	12.6	25.1	2764.2	2266.7	497.6	1698.0	427.9

*1 W=0.860 kcal/h, 1 BTU=0.252 kcal

Gain and sensitivity

The user can set the power amplifier's sensitivity through the switch on the back panel, so as to match with the third party devices. 26 dB, 29 dB, 32 dB, 35 dB, 38 dB, 41 dB are selectable. Input signal: 1 kHz sine wave, Amplitude value is RMS.

GAIN(dB)	DP-4035	DP-4065	DP-4100	DP-4120	DP-2200
26	2.65 V	—	—	—	—
29	1.88 V	2.56 V	3.17 V	—	—
32	1.33 V	1.81 V	2.25 V	2.46 V	3.18 V
35	0.94 V	1.28 V	1.59 V	1.74 V	2.25 V
38	—	0.91 V	1.13 V	1.23 V	1.59 V
41	—	—	—	0.87 V	1.13 V

SPECIFICATION

Model	DP-4120	DP-2200	DP-4100	DP-4065	DP-4035	
Rated Output Power(THD+N=1%, 1kHz continue sine wave, one channel driving)	8Ω/Stereo	4X1200W	2X2000W	4X1000W	4X650W	4X350W
	4Ω/Stereo	4X2040W	2X3400W	4X1700W	4X1100W	4X595W
	2Ω/Stereo*	4X3468W	2X5780W	4X2890W	4X1870W	4X1012W
	16Ω/Bridge	2X2400W	1X4000W	2X2000W	2X1300W	2X700W
	8Ω/Bridge	2X4080W	1X6800W	2X3400W	2X2200W	2X1190W
	4Ω/Bridge*	2X6936W	1X11560W	2X5780W	2X3740W	2X2023W
Output RMS voltage	109.5V	126.5V	89.4V	72.1V	72.1V	
Gain (Rated Power, 1kHz)	selectable 41dB 38dB 35dB 32dB		selectable 38dB 35dB 32dB 29dB		selectable 35dB 32dB 29dB 26dB	
THD+N	typical:0.01%(10% Rated Power, 8Ω)					
Cross-talk	≥90dB(20Hz-1kHz,below Rated Power)					
Frequency response	typical:+0,-0.5dB(10% Rated Power,20Hz-20kHz,8Ω)					
Input impedance	20kΩ(Balance), 10kΩ(Unbalance)					
Damp factor	typical:5000(8Ω,20Hz-200Hz)					
SNR	≥105dB(A weighted,20Hz-20kHz,8Ω)					
Main power	~100-240V(±10%), 50/60Hz					
Protection	Power under-voltage, Amplifier output DC, Thermal, Temp Power Control, Overload Power Control					
Size(W×H×D)	483x45x465mm	483x45x370mm				
Net weight	12.2kg	9.3kg	9.1kg	8.0kg		

* Test condition: 20ms, 1kHz, THD+N=1%.

WHARFEDALE PRO LIMITED WARRANTY

Wharfedale Pro products are warranted of manufacturing or material defects for a period of three years from the original date of purchase. In the event of malfunction, contact your authorised Wharfedale Pro dealer or distributor for information.

Please be aware that the warranty details may differ from country to country. Contact your dealer or distributor for information (available at www.wharfedalepro.com). These terms do not infringe your statutory rights.



Wharfedale Pro

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