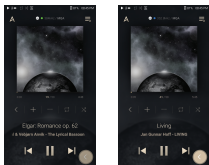


Astell&Kern PPF33 includes MQA technology, which enables you to play back MQA audio files and streams, delivering the sound of the original master recording.

The PPF33 Now Playing status shows green or blue light to indicate that the unit is decoding and playing an MQA stream or file, and denotes provenance to ensure that the sound is identical to that of the source material. It glows blue to indicate it is playing an MQA Studio file, which has either been approved in the studio by the artist/producer or has been verified by the copyright owner.

The MQA logo is a trade mark of MQA Limited. © MQA Limited 2019



## Disclaimers

The manufacturer, importer, and distributor shall not be liable for damages including accidental and personal injury due to the improper use or operation of this product. The information in this user manual was written based on current product specifications. The manufacturer, Dreamus Company Limited, regularly adds new features via OTA updates and will continue to apply new technologies in the future. Product specifications may be changed without prior notice. There is no warranty against data loss due to the use of this product.

The device must be used a minimum of 5mm away from the body in normal use conditions.

### CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED  
BY AN INCORRECT TYPE.  
DISPOSE OF USED BATTERIES ACCORDING  
TO THE INSTRUCTIONS

The excessive sound pressure from earphones and headphones can cause hearing loss.

## Specifications

### General Specifications

<b>Product Name</b>	SP2000
<b>Model</b>	PPF33
<b>Body Color</b>	Stainless Steel / Copper
<b>Body Material</b>	Stainless Steel / Copper
<b>Display</b>	5.0inch 720x1280 touch display
<b>Supported Audio Formats</b>	WAV, FLAC, WMA, MP3, OGG, APE, AAC, ALAC, AIFF, DFF, DSF, MQA
<b>MQA playback</b>	Services (Tidal Masters), Local files, External USB, MQA-CD(ripped)
<b>Sample rate</b>	PCM : 8kHz ~ 768kHz (8/16/24/32bits per Sample) DSD Native: DSD64(1bit 2.8MHz), Stereo / DSD128(1bit 5.6MHz), Stereo / DSD256(1bit 11.2MHz), Stereo / DSD512(1bit 22.4MHz), Stereo
<b>Output Level</b>	Balance 6.0Vrms, Unbalance 3.0Vrms (Condition No Load)
<b>DAC</b>	AKM AK4499EQ DAC x2 (Dual DAC)
<b>Decoding</b>	Support up to 32bit / 768kHz Bit-to-Bit playback
<b>Input</b>	USB Type-C input (for PC & MAC)
<b>Outputs</b>	PHONES (3.5mm) / Balanced Out (2.5mm, only 4-pole supported) Optical Out (3.5mm)
<b>Charging</b>	9V $\approx$ 1.67A / 5V $\approx$ 2A
<b>Wi-Fi</b>	802.11 a/b/g/n/ac (2.4/5/5.8GHz)
<b>Bluetooth</b>	V4.2 [A2DP, AVRCP, aptX™ HD]
<b>Dimensions</b>	3.00" [76.3mm] [W] x 5.19" [132mm] [H] x 0.61" [15.7mm] [D]
<b>Weight</b>	Stainless steel : 14.49oz [410.8g] / Copper : 15.25oz [432.4g]
<b>Feature Enhancements</b>	Firmware upgrade supported(OTA)
<b>Audio Specifications</b>	
<b>Frequency Response</b>	$\pm 0.062$ dB (Condition: 20Hz~20kHz) Unbalanced / $\pm 0.061$ dB (Condition: 20Hz~20kHz) Balanced, $\pm 0.68$ dB (Condition: 10Hz~70kHz) Unbalanced / $\pm 0.67$ dB (Condition: 10Hz~70kHz) Balanced
<b>S/N</b>	120dB @ 1kHz, Unbalanced / 123dB @ 1kHz, Balanced
<b>Crosstalk</b>	138dB @ 1kHz, Unbalanced / 144dB @ 1kHz, Balanced
<b>THD+N</b>	0.0007% @ 1kHz, Unbalanced / 0.0006% @ 1kHz, Balanced
<b>IMD SMPTE</b>	0.0004% 800Hz 10kHz(4:1) Unbalanced / 0.0004% 800Hz 10kHz(4:1) Balanced
<b>Output impedance</b>	Balanced Out 2.5mm (1ohm) / PHONES 3.5mm (2ohm)
<b>Clock Jitter</b>	25ps[Typ]
<b>Reference Clock Jitter</b>	200 Femto Seconds
<b>Memory</b>	
<b>Built-in Memory</b>	512GB[NAND]
<b>External Memory</b>	microSD(Max. 512GB) x 1
<b>Battery</b>	
<b>Capacity</b>	3,700mAh 3.8V Li-ion Battery
<b>Supported OS</b>	
<b>Supported OS</b>	Windows 7,8,10(32/64bit) Mac OS X 10.7 and up