PIXELHUE

P20

4k Presentation Switcher

Description

Powerful Functionalities

The P series employ FPGA-based high-performance image enhancement architecture and real 4K60p 4:4:4 10-bit internal video processing. With dual working modes, versatile 4K connectivity, high-quality video processing, multi-screen configuration and control, flawless image mosaic, LCD bezel compensation, multi-projector edge blending and much more, the P series are perfect fits for small/medium-sized live events and many fixed installations requiring high reliability, unrivaled ease of use, optimal image quality and cutting-edge live 4K processing features. Seamless transitions, smooth video display and various visual effects maximize audience engagement.

Dual working modes make the P series more capable, allowing users to choose the switcher mode or PGM only mode as needed. Multi-screen configuration and control can meet more application requirements. The P20/P20-DS supports up to 12 DL layers (2×MAIN+10×PIP) or 8 DL layers (4×MAIN+4×PIP) and the P10 supports up to 6 DL layers (2×MAIN+4×PIP). Layer layout is customizable and a variety of layer effects such as DSK, mask, crop, flip, cut & fill, border, shadow and KeyFrame are supported. Up to 128 presets can be saved for easy recall. High-resolution images can be captured from live inputs and outputs and used as BKG. In addition, the P20/P20-DS allows for free conversion between SDR, HDR10 and HLG, and the P20-DS supports Dante audio networking.

Longer Transmission Distance

10G optical fiber ports are provided for copying HDMI 2.0 output, allowing the P series to transmit signals to the LED controller (VX1000, VX600, VX400, H series, MX40 Pro, MCTRL 4K and NovaPro UHD Jr from NovaStar are currently supported) over a long distance (up to 10 km with SMF) without fiber converters. This method not only ensures the signal stability but also lowers the transmission cost, making the P series ideal for long-distance signal transmission.

Flexible Control Options

In addition to superior performances and outstanding visual experience, the P series are exceptionally easy to control via any of the following options. Multiple switchers can be controlled simultaneously by a single event controller/PC with PixelFlow when they are on the same LAN and in the same project.

- Fully-featured front panel buttons and 5-inch graphical LCD
- Versatile event controller U5/U5 Pro
- All-new event management software PixelFlow
- Third-party control system Stream Deck (Companion integrated into the P series)

Superb Stability & Reliability

The P series are created for applications requiring the highest stability and uptime. Different backup methods are supported, including device backup, input source backup, automatic output backup. Once the primary input source is not stable or disappears, it will be switched to the backup source seamlessly. When the primary device fails, the backup device will take over the work immediately to ensure uninterrupted operation. Seamless switching from the primary to backup device or connector with no downtime makes the products highly reliable and worry-free.

What's more, the products have passed a series of rigorous drop tests, shock & vibration tests and thermal tests, ensuring the products can survive in any kind of road trip or event environment.

Key Features

- Switching between switcher mode and PGM only mode
- Versatile 4K connectivity: HDMI 2.0, DP 1.2 and 12G-SDI
- 10G optical fiber ports for copying output and long-distance signal transmission
- Up to 2x 4K×2K@60Hz outputs in switcher mode and output resolution per P20/P20-DS in PGM only mode up to 8K×4K@60Hz
- Multi-screen configuration and control
- Custom layout of output connectors
- AUX outputs allowing auxiliary devices such as teleprompters to be connected
- A dedicated Multiviewer output allowing for live view of the PGM & PVW screens and all the connected sources from one display
- 2x Gigabit Ethernet ports used for control and live input view
- Up to 12 DL layers (2×MAIN+10×PIP) or 8 DL layers (4×MAIN+4×PIP)
- Layer effects: DSK, mask, crop, flip, cut & fill, border, shadow, KeyFrame and more
- Layer resource management
- Up to 128 presets
- Up to 255 BKGs & LOGOs (Maximum storage space: 512 MB)
- 12-bit/10-bit/8-bit video sources supported
- Free conversion between SDR, HDR10 and HLG (P20/P20-DS)
- 48kHz 32x32 Dante audio networking hardware and support (P20-DS)
- Advanced DSK capability: smart key, chroma key and luma key
- Individual RGB component adjustment for image quality parameters
- Deinterlacing of SDI video sources
- High-precision output synchronization in PGM only mode
- Various transition effects: fade and cut
- Bezel compensation
- Edge blending with support for easy
- overlap adjustment
- HDCP 1.4 and HDCP 2.2 for full-link content protection with a global switch for all
- inputs or outputs
- Device backup, copying output, and input source backup to guarantee stability
- and reliability
- Visualized live view of input and output connector statuses
- 5-inch graphical LCD allowing for a more intuitive user experience
- Virtual pixel function for convenient layer configuration
- Compatible with EDID on Mac
- Support for antistatic settings to keep events smooth and successful
- The system has passed 24/7 stability tests and is proven to be stable and reliable.

Specification

Technical Specification

Inputs	For an input that contains a DP 1.2 and an HDMI 2.0, only one connector can be used as the input source at the same time.
	
	• **DP 1.2**
	  ○ Maximum resolution: 4096 x 2160@60 Hz, 8192 x 1080@60 Hz
	  ○ Minimum resolution: $800 x 600@60 Hz
	  ○ Maximum width: 8192 pixels ($8192 x 1080@60 Hz)
	  ○ Maximum height: 8192 pixels ($1080 x 8192@60 Hz)
	  ○ Maximum frame rate: 120 Hz
	  ○ EDID management (support for standard resolutions up to 8192 x 1080@60 Hz and custom resolutions)
	  ○ HDCP 1.3 compliant
	  ○ No support for interlaced video signal
	  ○ (P20-DS) Support for dual-channel embedded audio (24bit/48kHz)
	• **HDMI 2.0**
	  ○ Maximum resolution: 4096 x 2160@60 Hz, 8192 x 1080@60 Hz
	  ○ Minimum resolution: 800 x 600@60 Hz
	  ○ Maximum width: 8192 pixels ($8192 x 1080@60 Hz)
	  ○ Maximum height: 8192 pixels ($1080 x 8192@60 Hz)
	  ○ Maximum frame rate: 120 Hz
	  ○ Support for HDR
	  ○ EDID management (support for standard resolutions up to 3840 x 2160@60 Hz and custom resolutions)
	  ○ HDCP 2.2 compliant and backward compatible
	  ○ Support for interlaced video signal
	  ○ (P20-DS) Support for dual-channel embedded audio (24bit/48kHz)
	• **12G-SDI**
	  ○ Support for ST-2082 (12G), ST-2081 (6G), ST-424 (3G), ST-292 (HD)
	  ○ Maximum resolution: 4096 x 2160@60 Hz
	  ○ Maximum frame rate: 60 Hz
	  ○ Support for interlaced video signal
	  ○ (P20-DS) Support for dual-channel embedded audio (24bit/48kHz)

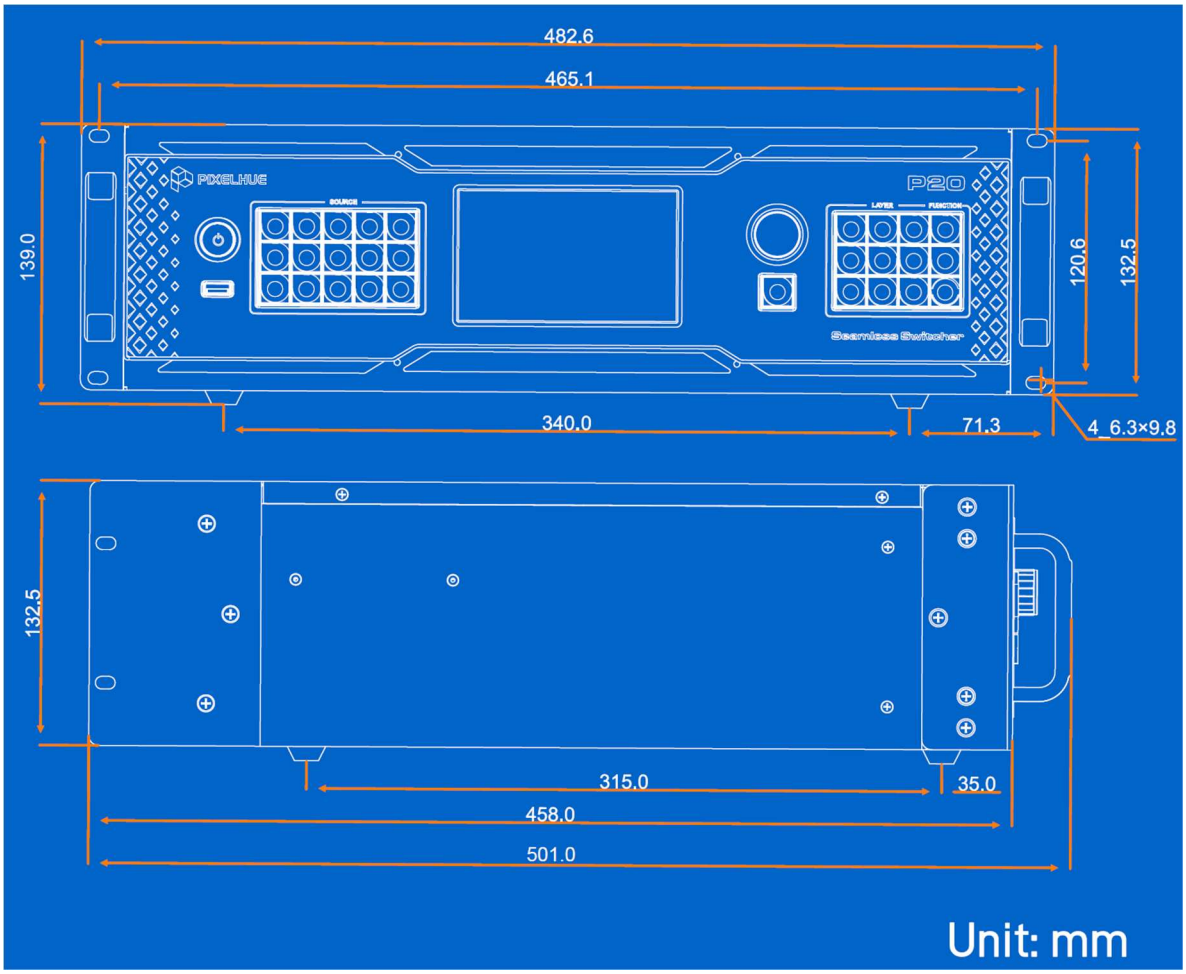
Output	• **HDMI 2.0** • Maximum resolution: 4096 x 2160@60 Hz, 8192 x 1080@60 Hz • Minimum resolution: 800 x 600@60 Hz • Maximum width: 8192 pixels (8192 x 1080@60 Hz) • Maximum height: 8192 pixels ($1080 x 8192@60 Hz) • Maximum frame rate: 120 Hz • Support for HDR • EDID management (support for standard resolutions up to $3840 x 2160@60 Hz and custom resolutions) • HDCP 2.2 compliant and downward compatible • Support for interlaced video signal • (P20-DS) Support for dual-channel embedded audio (24bit/48kHz) • **HDMI 1.3 (P10)** • Maximum resolution: 1920 x 1080@60 Hz, 2048 x 1080@60 Hz • Minimum resolution: 800 x 600@60 Hz • Maximum width: 2048 pixels (2048 x1080@60 Hz) • Maximum height: 2048 pixels (1080 x 2048@60 Hz) • Maximum frame rate: 120 Hz • EDID management (support for standard resolutions up to 2048 x 1152@60 Hz and custom resolutions) • HDCP 1.4 compliant and downward compatible • Support for interlaced video signal • **12G-SDI (P20-DS)** • Copying HDMI outputs • Compatible with SD-SDI, HD-SDI, 3G-SDI and 6G-SDI • Support for ST-2082 (12G), ST-2081 (6G), ST-424 (3G), ST-292 (HD) • Maximum resolution: 4096 x 2160@60\ Hz • Support for interlaced video signal • Support for dual-channel embedded audio (24bit/48kHz)
OPT	• 10G optical fiber ports for copying HDMI outputs • Transmission distance with SMF up to 10 km • (P20-DS) Support for dual-channel embedded audio (24bit/48kHz)

Dante Audio Networking (P20-DS)	• Dual redundancy Gigabit Ethernet ports (AES67 compliant) • Audio de-embedding/embedding on every input & output (raw audio) • De-embedded audio channels can be routed directly to the Dante network • Audio channels from external Dante audio processor can be re-embedded for sending to display, streaming or recording device • $32 x 32$ Dante channels @48 kHz
Multiviewer	• One dedicated HDMI 1.3 connector • Connect to the Multiviewer display, allowing for live view of all the inputs and outputs from one display. • The default output resolution is $1920 x 1080@60 Hz and the frame rate can be changed. • A variety of Multiviewer layout templates are provided.
AUX	• HDMI 1.3 connectors with support for interlaced video signal output • Connect to auxiliary devices such as teleprompters. • Default output resolution: $1920 x 1080@60 Hz
Ethernet	• 2 x Gigabit Ethernet ports used for control and input view • One works as primary and the other as backup. • Two Ethernet ports share the same IP address.
Genlock	Genlock synchronization signal connector • GENLOCK IN: Synchronization signal input • GENLOCK LOOP: Synchronization signal loop output

Transitions & Effects	• Seamless transition from PVW to PGM via Take, Cut or T-bar operation • Fade and cut transition effects supported • Customizable transition durations (0.1s to 10s) • Two options for transition between PVW and PGM: Copy and Swap
Layers	• P20/P20-DS: 2 x MAIN DL layers and $10 x PIP DL layers or 4 x MAIN DL layers and 4 x PIP DL layers • P10: 2 x MAIN DL layers and $4 x PIP DL layers • Layer effects: DSK, mask, crop, flip, cut & fill, border, shadow, KeyFrame and more • Layer preset: All (or a portion) of the current layer's properties (such as input source, position, size, effects, etc.) can be saved as a layer preset in PixelFlow for easy recall.
BKG & Logo	• Up to 255 BKGs & LOGOs (Maximum storage space: 512 MB) • Imported images can be used as BKG and LOGO. • High-resolution images captured from live inputs and outputs can be used as BKG. • A solid color can be selected as BKG. • BKG can be repositioned and resized. LOGO can be repositioned only.
Control Options	• Front panel buttons and 5-inch graphical LCD • Event controller U5/U5 Pro • Event management software PixelFlow

	• Third-party control system Stream Deck (Companion integrated into the P series)
PixelFlow Software Functionalities	• Long-term stable running • Upgraded and visualized UI, adaptive to U5/U5 Pro/PC screens • One click to change skins of U5/U5 Pro buttons • Software parameter controllable by U5/U5 Pro encoders or faders • Distinct function areas and hover menu for ease of use • Fully functional simulator for offline configuration and practice
Processing Capability	• FPGA-based high-performance image enhancement architecture • Ultra-low latency, as low as 1 frame in proper configuration • BT.601, BT.709, BT.2020, DCI-P3 color space processing support • Free conversion between SDR, HDR10 and HLG (P20/P20-DS) • Advanced DSK capability: smart key, chroma key and luma key • Compatible with HDCP 1.4 and HDCP 2.2

Dimensions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465.1
139.0
120.6
132.5
PIXELHUE
P20
SOURCE
LAYER
FUNCTION
Seamless Switcher
340.0
71.3
4_6.3×9.8
132.5
315.0
35.0
458.0
501.0
Unit: mm