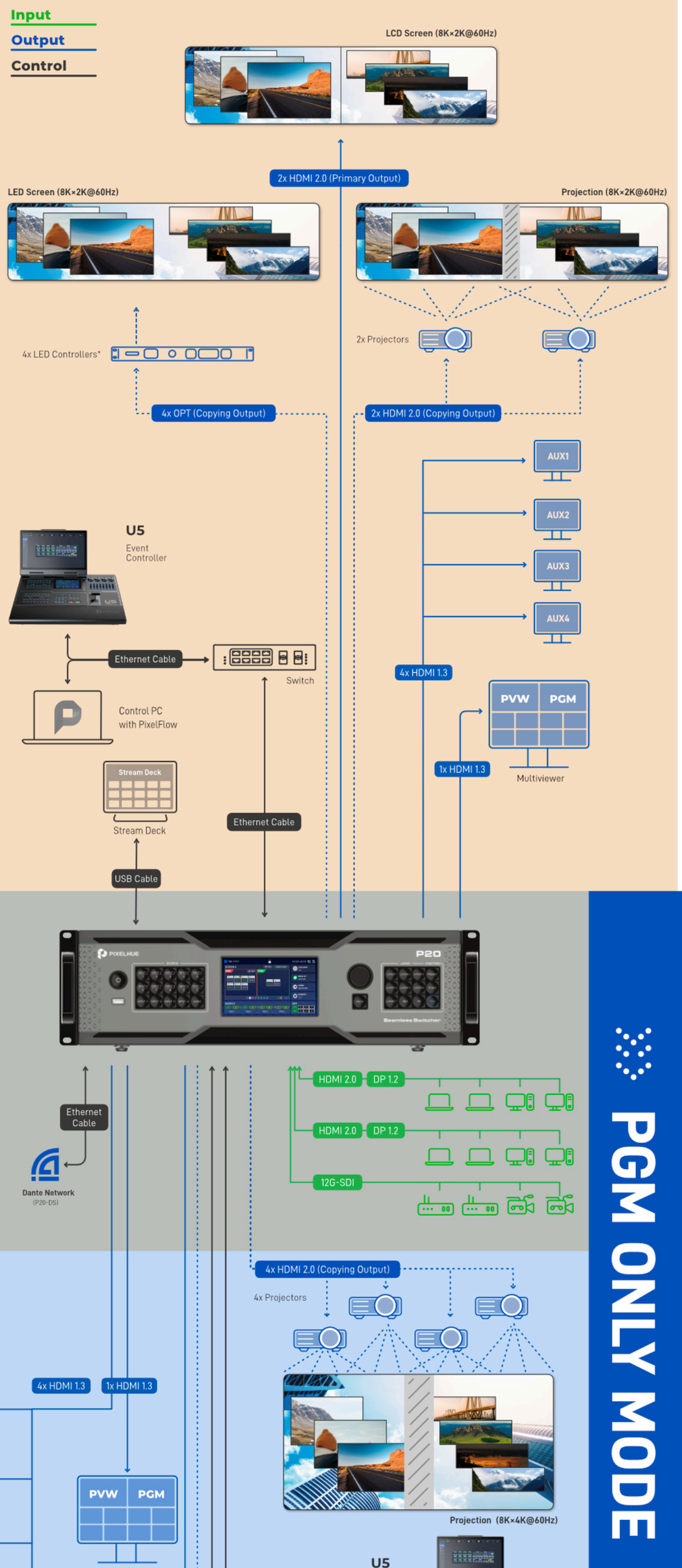
APPLICATION

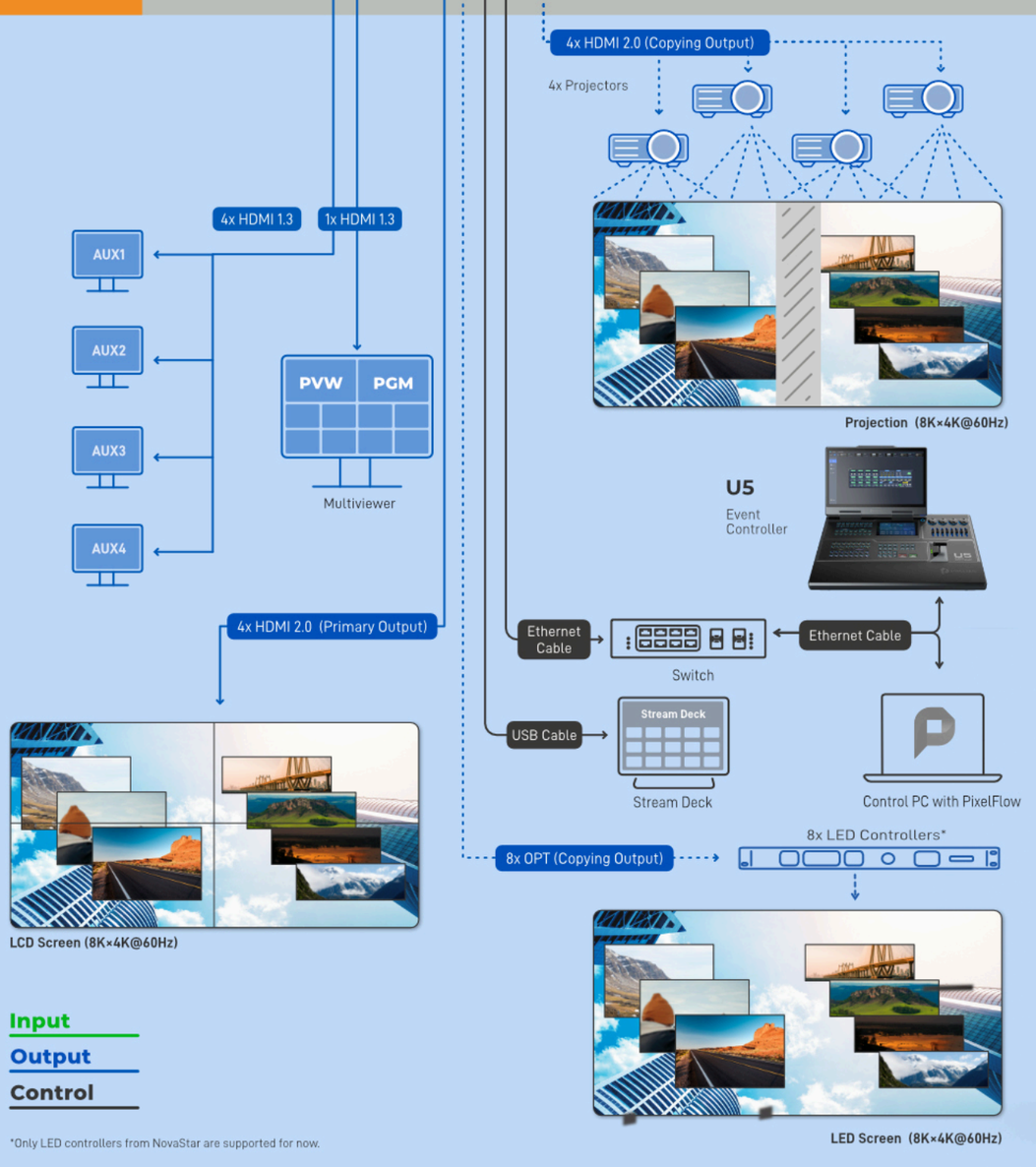
www.pixelhue.com
info@pixelhue.com
1201A, 8 Caihefang Road, Haidian District, Beijing, China

PIXELHUE

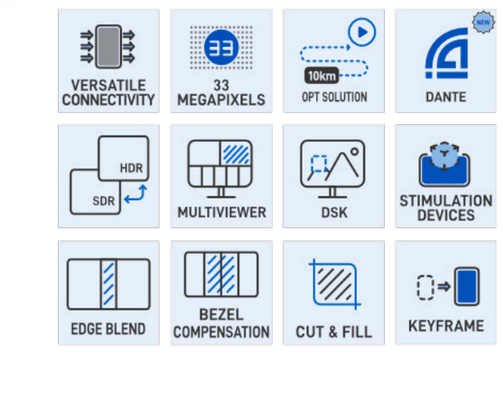
SWITCHER MODE



PGM ONLY MODE



*Only LED controllers from NovaStar are supported for now.



P20/P20-DS/P10
4K Presentation Switchers

P SERIES

Ideal for Small/Medium-Sized Events

P_EN_2024-12-25
*This datasheet includes features up to V1.6.0.

Flawless Live 4K Processing

The P series (P20/P20-DS/P10) are PIXELHUE's all-new 4K presentation switchers fully featured in a compact form factor. Featuring high-quality 4K processing, the P series are designed with a wide variety of 4K connectors, including HDMI 2.0, DP 1.2 and 12G-SDI.

The P series can work in switcher mode or PGM only mode. In switcher mode, a single P20/P20-DS supports up to two 4K×2K@60Hz outputs and a single P10 supports one 4K×2K@60Hz output. In PGM only mode, the output resolution per P20/P20-DS is up to 8K×4K@60Hz and P10 is up to 8K×2K@60Hz.

Additionally, the P series come with dedicated AUX outputs connecting to auxiliary devices and a dedicated Multiviewer output is provided for live view of all the inputs and outputs from one display. High-performance image deinterlacing is also supported.

P20-DS

Presentation Switcher

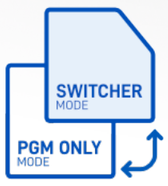
P20

Presentation Switcher

P10

Presentation Switcher

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.

UP TO 12 LAYERS

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)

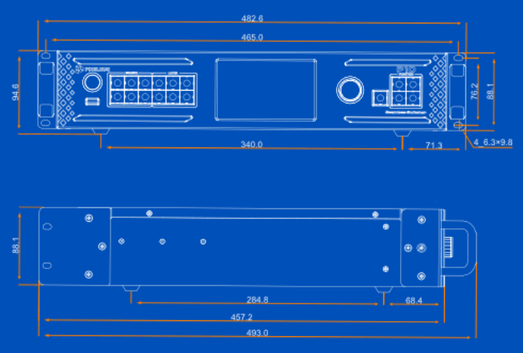
Superb Stability & Reliability

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.

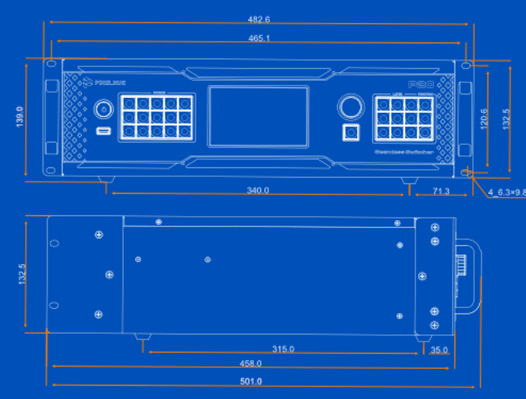
What's more, the products have passed a series of rigorous drop tests, shock & vibration tests and thermal tests, ensuring the products can survive in any kind of road trip or event environment.

Dimensions

P10



P20/P20-DS



Unit: mm

MODELS

	P20	P20-DS	P10
Inputs	8x DP 1.2/HDMI 2.0 4x 12G-SDI (in&loop)	8x DP 1.2/HDMI 2.0 4x 12G-SDI	4x DP 1.2/HDMI 2.0 2x 12G-SDI (in&loop)
Outputs	8x HDMI 2.0	8x HDMI 2.0 4x 12G-SDI	2x HDMI 2.0 6x HDMI 1.3
OPT Ports	8		4
Audio Connectors	2x 3.5 mm line in 2x 3.5 mm line out	2x Dante connectors 2x 3.5 mm line in 2x 3.5 mm line out	2x 3.5 mm line in 2x 3.5 mm line out
	*The audio function of the P20 and P10 will be implemented in future updates.		
Layers	12 DL layers (2×MAIN+10×PIP) or 8 DL layers (4×MAIN+4×PIP)		6 DL layers (2×MAIN+4×PIP)
Multiviewer Connectors	1x HDMI 1.3		
AUX Connectors	4x HDMI 1.3		2x HDMI 1.3
Global Presets	128		
BKG & LOGO	Up to 255 BKGs & LOGOs (Maximum storage space: 512 MB)		
Front Screen	5" LCD		
Ethernet Ports	2x Gigabit Ethernet ports		
Control	• Front panel buttons and LCD • Event controller U5/U5 Pro • Event management software PixelFlow • Third-party control system Stream Deck		

		P20	P20-DS	P10
Chassis		3 RU		2 RU
Dimensions		W 482.6 × D 501.0 × H 139.0 mm W 19.0 × D 19.7 × H 5.5 inches		W 482.6 × D 493.0 × H 94.6 mm W 19.0 × D 19.4 × H 3.7 inches
Weight	Net Weight	10.2 kg/22.5 lbs	10.7 kg/23.6 lbs	7.9 kg/17.4 lbs
	With Paper Box	14.3 kg/31.5 lbs	14.8 kg/32.6 lbs	10.2 kg/22.5 lbs
	With Flight Case	25.2 kg/55.6 lbs	25.7 kg/56.7 lbs	20.6 kg/45.4 lbs
Electrical Parameters	Input Power	100-240V~, 50/60Hz		100-240V~, 50/60Hz, 3.0-1.5A
	Max Power Consumption	140 W	160 W	82 W
Noise on Average *(@1, 0.75m height)*		45.6 dB		41.9 dB
Operating Environment		Temperature: 0°C to 50°C Humidity: 0% RH to 80% RH, non-condensing		
Storage Environment		Temperature: –20°C to +60°C Humidity: 0% RH to 95% RH, non-condensing		
Certifications		FCC, IC, CE, KC, CB		
Packing Information		• 1x Power cable • 1x Ethernet cable • 1x HDMI cable • 1x DP cable		• 1x Customer Letter • 1x Quick Start Guide • 1x Safety Manual • 1x Certificate of Approval

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
- P20/P20-DS: 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
- P10: 1x 4K×2K@60Hz output in switcher mode and output resolution per P10 in PGM only mode up to 8K×2K@60Hz
- Multi-screen configuration and control
- Super screen feature allowing multiple screens to be managed simultaneously
- 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
- P20/P20-DS: Up to 12 DL layers (2×MAIN+10×PIP) or 8 DL layers (4×MAIN+4×PIP)
- P10: Up to 6 DL layers (2×MAIN+4×PIP)
- Layer effects: DSK, mask, crop, flip, cut & fill, border, shadow, KeyFrame and more
- Layer resource management
- Up to 128 presets with support for complete and relative 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 64x64 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
- Multiple standard timings such as DMT, CEA and SMPTE

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: 4096×2160@60Hz/8192×1080@60Hz
  - Minimum resolution: 800×600@60Hz
  - Maximum width: 8192 pixels (8192×1080@60Hz)
  - Maximum height: 8192 pixels (1080×8192@60Hz)
  - Maximum frame rate: 120 Hz
  - EDID management (support for standard resolutions up to 8192×1080@60Hz and custom resolutions)
  - HDCP 1.3 compliant
  - (P20-DS) Support for dual-channel embedded audio (24bit/48kHz)
- HDMI 2.0
  - Maximum resolution: 4096×2160@60Hz/8192×1080@60Hz
  - Minimum resolution: 800×600@60Hz
  - Maximum width: 8192 pixels (8192×1080@60Hz)
  - Maximum height: 8192 pixels (1080×8192@60Hz)
  - Maximum frame rate: 120 Hz
  - Support for HDR
  - EDID management (support for standard resolutions up to 3840×2160@60Hz 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: 4096×2160@60Hz
  - Maximum frame rate: 60 Hz
  - Support for interlaced video signal
  - (P20-DS) Support for dual-channel embedded audio (24bit/48kHz)

Outputs

- HDMI 2.0
  - Maximum resolution: 4096×2160@60Hz/8192×1080@60Hz
  - Minimum resolution: 800×600@60Hz
  - Maximum width: 8192 pixels (8192×1080@60Hz)
  - Maximum height: 8192 pixels (1080×8192@60Hz)
  - Maximum frame rate: 120 Hz
  - Support for HDR
  - EDID management (support for standard resolutions up to 3840×2160@60Hz 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: 1920×1080@60Hz/2048×1080@60Hz
  - Minimum resolution: 800×600@60Hz
  - Maximum width: 2048 pixels (2048×1080@60Hz)
  - Maximum height: 2048 pixels (1080×2048@60Hz)
  - Maximum frame rate: 120 Hz
  - EDID management (support for standard resolutions up to 2048×1152@60Hz 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: 4096×2160@60Hz
  - 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
- 64×64 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 1920×1080@60Hz 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: 1920×1080@60Hz

Ethernet

- 2x 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

Transition & 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: 2x MAIN DL layers and 10x PIP DL layers or 4x MAIN DL layers and 4x PIP DL layers
- P10: 2x MAIN DL layers and 4x PIP DL layers
- Layer effects: DSK, mask, crop, flip, cut & fill, border, shadow, KeyFrame and more
- Layer template: All (or a portion) of the current layer's properties (such as input source, position, size, effects, etc.) can be saved as a layer template 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

Supported Resolutions

Input	Bit Depth	Sampling Format	Supported Resolutions	Supported Bandwidth
HDMI 2.0 DP 1.2	8bit	RGB 4:4:4	4096×2160@60Hz 8192×1080@60Hz	18 Gbps
		YCbCr 4:4:4		
		YCbCr 4:2:2		
	10bit	RGB 4:4:4	4096×2160@30Hz 4096×1080@60Hz	
		YCbCr 4:4:4		
		YCbCr 4:2:2	4096×2160@60Hz	
	12bit	RGB 4:4:4	4096×2160@30Hz 4096×1080@60Hz	
		YCbCr 4:4:4		
		YCbCr 4:2:2	4096×2160@60Hz	
12G-SDI	10 bit	YCbCr 4:2:2	4096×2160@60Hz	11.88 Gbps

Note: Specifications subject to change without prior notice.