

# TECHNICAL SPECIFICATIONS ROLAND VR-120HD

## VIDEO

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### Video Processing

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4:2:2 (Y/Pb/Pr), 8-bit

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### Number of Video Channels

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12 channels

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### Video Input Formats

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#### HDMI IN 1--6

480/59.94i, 480/59.94p, 720/59.94p, 1080/59.94i, 1080/59.94p, 1080/60p,  
1080/29.97p, 1080/30p \*1

576/50i, 576/50p, 720/50p, 1080/50i, 1080/50p, 1080/25p \*2  
1080/23.98p, 1080/24p

VGA (640 x 480/60 Hz), SVGA (800 x 600/60 Hz), XGA (1024 x 768/60 Hz)

WXGA (1280 x 800/60 Hz), SXGA (1280 x 1024/60 Hz)

FWXGA (1366 x 768/60 Hz), SXGA+ (1400 x 1050/60 Hz)

UXGA (1600 x 1200/60 Hz), WUXGA (1920 x 1200/60 Hz)

\* The refresh rate is the maximum value of each resolution.

\* Conforms to CEA-861-E, VESA DMT Version 1.0 Revision 11.

\* 1920 x 1200/60 Hz: Reduced blanking

\* The input interlaced video signal is converted to progressive video signal by internal processing.

\*1 Frame Rate = 59.94 Hz, 60 Hz

\*2 Frame Rate = 50 Hz

#### SDI IN 1--6

720/59.94p \*1, \*3

720/50p \*1, \*4

1080/59.94i, 1080/59.94p, 1080/60p, 1080/29.97p, 1080/30p \*2, \*3

1080/50i, 1080/50p, 1080/25p \*2, \*4

1080/23.98p, 1080/24p \*2

\* The input interlaced video signal is converted to progressive video signal by internal processing.

\*1 Output Format = 720p

\*2 Output Format = 1080i or 1080p

\*3 Frame Rate = 59.94 Hz, 60 Hz

\*4 Frame Rate = 50 Hz

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### Video Output Formats

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#### HDMI OUT 1--3, SDI OUT 1--3:

720/59.94p \*1, \*4, 720/60p \*1, \*5, 720/50p \*1, \*8, 1080/59.94i \*2, \*4, 1080/60i \*2, \*5,  
1080/50i \*2, \*8, 1080/59.94p \*3, \*4, 1080/60p \*3, \*5, 1080/29.97p \*3, \*6, 1080/30p \*3,  
\*7, 1080/50p \*3, \*8, 1080/25p \*3, \*9, 1080/23.98p \*3, \*10, 1080/24p \*3, \*11

\*1 Output Format = 720p

\*2 Output Format = 1080i

\*3 Output Format = 1080p

\*4 Frame Rate = 59.94 Hz

\*5 Frame Rate = 60 Hz

\*6 Frame Rate = 29.97 Hz

\*7 Frame Rate = 30 Hz

- \*8 Frame Rate = 50 Hz
- \*9 Frame Rate = 25 Hz
- \*10 Frame Rate = 23.98 Hz
- \*11 Frame Rate = 24 Hz

#### USB STREAM:

- 1080/59.94p, 720/59.94p, 640 x 480/59.94p \*1, 1080/60p, 720/60p, 640 x 480/60p \*2, 1080/29.97p, 720/29.97p, 640 x 480/29.97p \*3, 1080/30p, 720/30p, 640 x 480/30p \*4, 1080/50p, 720/50p, 640 x 480/50p \*5, 1080/25p, 720/25p, 640 x 480/25p \*6, 1080/23.98p, 720/23.98p, 640 x 480/23.98p \*7, 1080/24p, 720/24p, 640 x 480/24p \*8
- \*Uncompressed format (YUY2) and Compressed format (Motion JPEG) supported.
- \*1 Frame Rate(USB Out) = 59.94 Hz
  - \*2 Frame Rate(USB Out) = 60 Hz
  - \*3 Frame Rate(USB Out) = 29.97 Hz
  - \*4 Frame Rate(USB Out) = 30 Hz
  - \*5 Frame Rate(USB Out) = 50 Hz
  - \*6 Frame Rate(USB Out) = 25 Hz
  - \*7 Frame Rate(USB Out) = 23.98 Hz
  - \*8 Frame Rate(USB Out) = 24 Hz

#### Stream and Record formats

- 720/59.94p \*1, \*3, 720/60p \*1, \*4, 720/29.97p \*1, \*5, 720/30p \*1, \*6, 720/50p \*1, \*7, 720/25p \*1, \*8, 1080/59.94p \*2, \*3, 1080/60p \*2, \*4, 1080/29.97p \*2, \*5, 1080/30p \*2, \*6, 1080/50p \*2, \*7, 1080/25p \*2, \*8, 1080/23.98p \*2, \*9, 1080/24p \*2, \*10
- \*1 Output Format = 720p
  - \*2 Output Format = 1080p
  - \*3 Frame Rate (Stream/Record) = 59.94 Hz
  - \*4 Frame Rate (Stream/Record) = 60 Hz
  - \*5 Frame Rate (Stream/Record) = 29.97 Hz
  - \*6 Frame Rate (Stream/Record) = 30 Hz
  - \*7 Frame Rate (Stream/Record) = 50 Hz
  - \*8 Frame Rate (Stream/Record) = 25 Hz
  - \*9 Frame Rate (Stream/Record) = 23.98 Hz
  - \*10 Frame Rate (Stream/Record) = 24 Hz

File Format: MP4

Codec:

H.264, target bitrate up to 20,000 kbps

AAC LC, 16 bits, 48 kHz, stereo, target bitrate up to 384 kbps

File Format: WAV

Codec:

Linear PCM, 16 bits, 48 kHz, stereo

\* If either the streaming and recording format or the file played by the video player exceeds 1080/30p, the streaming and recording and video player functions cannot be used simultaneously.

\* If the bitrate setting for Streaming and Recording and the bitrate of the file played on Video Player exceeds 20,000 kbps, Streaming and Recording and Video player cannot be used simultaneously.

#### Video Player

File Format: MP4 (H.264, AAC), Average bit rate of 20,000 kbps or less, Maximum 1080/60p

\* If either the streaming and recording format or the file played by the video player exceeds 1080/30p, the streaming and recording and video player functions cannot be used simultaneously.

\* If the bitrate setting for Streaming and Recording and the bitrate of the file played on Video Player exceeds 20,000 kbps, Streaming and Recording and Video player cannot be used simultaneously.

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#### Still Image:

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Bitmap File (.bmp) Maximum 1920 x 1080 pixels, 24-bit color, uncompressed.

PNG File (.png) Maximum 1920 x 1080 pixels, 24-bit color

JPEG File (.jpg, .jpeg) Maximum 1920 x 1080 pixels, 24-bit color

\* It can be stored up to 16 files in the internal memory.

\* It can be exported in the SD Card and USB flash drive.

\* PNG alpha channel supported.

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#### Video Effects

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Transition: Cut, Mix (Dissolve/Fam/Nam), WIPE (8 types), SPLIT (2 types)

Composition: PinP x 4 (Square, Circle, Diamond), Keyer x 4 (Luminance Key,

Chroma Key), DSK x 2 (Luminance Key, Chroma Key, Alpha Key, External Key)

Others: Multi-View (3 types), Flip horizontal, Flip vertical, Still Image capture, Still

Image playback, Output fade (Audio, Video: White or Black), Test pattern output,

Stream Delay

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## AUDIO

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### Audio Processing

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Sample rate: 24 bits, 48 kHz

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### Number of Audio Channels

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42 channels

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### Audio Formats

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USB STREAM (input/output): Linear PCM, 24 bits, 48 kHz, 2 ch

Bluetooth (input): Linear PCM, 24 bits, 48 kHz, 2 ch

HDMI IN: Linear PCM, 24 bits, 48 kHz, 2 ch

HDMI OUT: Linear PCM, 24 bits, 48 kHz, 8 ch

SDI IN: Linear PCM, 24 bits, 48 kHz, 2 ch (Conforms to SMPTE 299M)

SDI OUT: Linear PCM, 24 bits, 48 kHz, 8 ch (Conforms to SMPTE 299M)

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### Audio Player

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File format: WAV (Linear PCM, 16 bits, 48 kHz/44.1 kHz, stereo)

\* It can be stored up to 16 tracks in the internal memory.

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### Audio Effects

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Channel Effects: High pass filter, Echo canceller, Anti-feedback, Noise gate, De-esser, Compressor, 4-Band equalizer, Voice changer, Delay, Auto mixing

Master Effects: Reverb, 4-Band equalizer, Compressor/Limiter, Loudness Auto Gain Control, Adaptive Noise Reduction, Low Frequency Cut, 15-Band GEQ, Delay

Others: Output fade, Test tone output

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## **COMMON SECTION**

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### Recording Media

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SDHC/SDXC card (sold separately)  
USB Memory (sold separately)  
\* SDXC card is required for video recording.

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### Other Functions

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Scene Memory (32 types)  
Macro Control (100 types)  
Sequencer Control (1,000 steps)  
Sequencer Control  
Panel lock function  
EDID Emulator  
Auto Switching  
Auto Input Detect  
Smart Tally  
Remote Camera Control (Up to 12 units)  
External Rec Control

## CONNECTORS

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### Video Input Connectors

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HDMI IN 1--6: HDMI type A x 6

\* HDCP Supported

\* Multi-format Supported

SDI IN 1--6: BNC type x 6

\* Conforms to SMPTE 424M (SMPTE 425M-AB), 292M

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### Video Output Connectors

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HDMI OUT 1--3: HDMI type A x 3

\* HDCP Supported

SDI OUT 1--3: BNC type x 3

\* Conforms to SMPTE 424M (SMPTE 425M-AB), 292M

USB STREAM: USB Type-C (TM)

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### Audio Input Connectors

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Analog:

AUDIO IN 1--6: Combo type (XLR, 1/4-inch TRS phone), phantom power DC 48 V (unloaded maximum), 14 mA (maximum load)

AUDIO IN 7/L, 8/R: RCA phono type

AUDIO IN 9/L, 10/R: RCA phono type

Digital:

USB STREAM: USB Type-C (TM)

Bluetooth

HDMI IN 1--6: HDMI type A x 6

SDI IN 1--6: BNC type x 6

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### Audio Output Connectors

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Analog:

AUDIO OUT 1--4: XLR type

AUDIO OUT 5--6: RCA phono type

PHONES: Stereo 1/4-inch phone type, Stereo miniature phone type

Digital:

USB STREAM: USB Type-C (TM)

HDMI OUT 1--3: HDMI type A x 3

SDI OUT 1--3: BNC type x 3

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### Other Connectors

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USB HOST: USB A type (for USB flash drive)

USB STREAM: USB Type-C (TM) (for remote control from PC and iPad)

Bluetooth: for remote control from iPad

CTL/EXP 1, 2: 1/4-inch TRS phone type (for remote control from foot switch and expression pedal)

TALLY/GPIO: DB-25 type (Female)(Tally/GPO: 16, GPI: 8)

RS-232: DB-9 type (Male) (for Remote Control)

DIRECT STREAM: RJ45, 1000BASE-TX (for Live Streaming and Remote Control)  
Reference IN/THRU: BNC type \* Black Burst (Sync to frames), Bi-Level, Tri-Level

## AUDIO INPUT/OUTPUT CHARACTERISTICS

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### Input Level

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AUDIO IN 1--6: -64--+4 dBu (Maximum: +24 dBu)  
AUDIO IN 7/L, 8/R: -10 dBu (Maximum: +10 dBu)  
AUDIO IN 9/L, 10/R: -10 dBu (Maximum: +10 dBu)

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### Input Impedance

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AUDIO IN 1--6: 30 k ohms  
AUDIO IN 7/L, 8/R: 7 k ohms  
AUDIO IN 9/L, 10/R: 7 k ohms

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### Output Level

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AUDIO OUT 1--4 (XLR): +4 dBu (Maximum: +24 dBu)  
AUDIO OUT 5--6 (RCA): -10 dBu (Maximum: +10 dBu)  
PHONES: 92 mW + 92 mW (32 ohms)

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### Output Impedance

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AUDIO OUT (XLR): 600 ohms  
AUDIO OUT (RCA): 1 k ohm  
PHONES: 56 ohms

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### Residual Noise Level (IHF-A, typ.)

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-92 dBu (All faders: Min)  
-89 dBu ([MAIN] Fader: Unity, Input faders: Unity only one AUDIO IN 1 Connector, Analog gain: Min)  
-62 dBu ([MAIN] Fader: Unity, Input faders: Unity only one AUDIO IN 1 Connector, Analog gain: Max)  
\* Input 150 ohms terminate  
\* Output Connector: AUDIO OUT 1--4 Connectors (XLR)

-101 dBu (All faders: Min)  
-100 dBu ([MAIN] Fader: Unity, Input faders: Unity only one AUDIO IN 1 jack, Analog gain: Min)  
-75 dBu ([MAIN] Fader: Unity, Input faders: Unity only one AUDIO IN 1 jack, Analog gain: Max)  
\* Input 150 ohms terminate  
\* Output Connector: AUDIO OUT (RCA) Connectors

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## **OTHERS**

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### **Bluetooth**

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Ver 5.0

Profile Support: A2DP (Audio), GATT (MIDI over Bluetooth Low Energy)

Codec: SBC (Support to the content protection of the SCMS-T method)

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### **Display**

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Graphic Type, 7", Wide VGA (800 x 480 dots), backlite LCD (Color/Touch screen)

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### **Power Supply**

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AC Adaptor

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### **Current Draw**

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3.0 A

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### **Power Consumption**

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69 W

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### **Operation Temperature**

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+0 to +40 degrees Celsius

+32 to +104 degrees Fahrenheit

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### **Dimensions**

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437 (W) x 304 (D) x 109 (H) mm  
17-1/4 (W) x 12 (D) x 4-5/16 (H) inches

482 (W) x 304 (D) x 109 (H) mm  
19 (W) x 10 (D) x 4-1/16 (H) inches  
\* When rack mount angles are fitted.

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### **Weight (excluding AC adaptor)**

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5.3 kg  
11 lbs 11 oz

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### **Accessories**

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Startup Guide  
Leaflet "USING THE UNIT SAFELY"  
AC adaptor  
Power cord  
Rack-mount angle x 2  
Rack-mount angle mounting screw x 6

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### **Options (sold separately)**

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Footswitch: BOSS FS-5U, FS-6, FS-7  
Expression Pedal: EV-5, EV-30, BOSS FV-500L, FV-500H

\* 0 dBu = 0.775 Vrms

\* This product is a Class A digital device under FCC part 15.