

madVR Envy - Model Comparison and Specifications <sup>4</sup>						
Features by model <sup>4</sup>	Core MK1	Core MK1 w/ Premium Pack	Core MK2 8K RDY 48G	Core MK2 w/ Premium Pack	Pro MK3 8K 48G	Extreme MK3 8K 48G
<b>HDR Dynamic Tone Mapping (DTM)</b>						
Frame by frame 4K HDR dynamic tone mapping	✓	✓	✓	✓	✓	✓
Preset HDR "Looks" to choose from, based on your preferences	✓	✓	✓	✓	✓	✓
Easily adjustable Highlight and Global Saturation for HDR	✓	✓	✓	✓	✓	✓
Contrast Recovery (maximizes contrast based on HDR histogram)	✓	✓	✓	✓	✓	✓
Highlight Recovery (maximizes fine detail in bright image areas)	✓	✓	✓	✓	✓	✓
Shadow Detail Recovery (maximizes shadow detail)	✓	✓	✓	✓	✓	✓
<b>Motion Handling, Scaling &amp; Deinterlacing</b>						
Ring-free & artifact-free chroma upscaling	✓	✓	✓	✓	✓	✓
Sharp & ring-free high quality downscaling	✓	✓	✓	✓	✓	✓
AI Upscaling up to 4K60	✓	✓	✓	✓	✓	✓
DeintAI™ (AI video mode deinterlacing for Blu-rays and broadcast TV)	✓	✓	✓	✓	✓	✓
Upscaling to 5K24/50/60, 8K24/60, and any custom resolution up to 8K60 <sup>1</sup>	-	✓	-	✓	✓	✓
MotionAI™ (per-pixel, AI motion interpolation)	-	-	-	-	-	✓
<b>Aspect Ratios Management</b>						
Bi-directional non-linear stretch for scope screens (remove or reduce side bars)	✓	✓	✓	✓	✓	✓
Bi-directional non-linear stretch for 16:9 screens (remove or reduce top/bottom bars)	✓	✓	✓	✓	✓	✓
Define and fit content to any aspect ratio screen, including custom ARs	✓	✓	✓	✓	✓	✓
Image shift for CIW projection (shift black bars on 16:9 screens to top or bottom)	✓	✓	✓	✓	✓	✓
Convergence Correction	✓	✓	✓	✓	✓	✓
Automatic, truly instant aspect ratio and black bar detection, including IMAX format	✓	✓	✓	✓	✓	✓
AI anamorphic stretch upscaling	✓	✓	✓	✓	✓	✓
Subtitle Management (fit subtitles by dynamically resizing the image) <sup>11</sup>	✓	✓	✓	✓	✓	✓
Dynamic Subtitle Overlay (reposition & dim subtitles without resizing the image) <sup>11</sup>	-	✓	-	✓	✓	✓
Automatic activation of JVC & Sony lens memories (via IP control) <sup>10</sup>	-	✓	-	✓	✓	✓
Geometry Correction (for a-lens barrel distortion, curved screens, off-axis PJ installs)	-	-	-	-	-	✓
<b>Artifact Reduction and Edge/Texture Enhancement</b>						
Sharpening and edge enhancement	✓	✓	✓	✓	✓	✓
Texture detail enhancement	✓	✓	✓	✓	✓	✓
AI compression artifact reduction	-	✓	-	✓	✓	✓
AI grain and noise reduction	-	✓	-	✓	✓	✓
Banding reduction	-	✓	-	✓	✓	✓
Ringing reduction	-	✓	-	✓	✓	✓

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<b>General</b>						
96-bit per pixel floating point using 4:4:4 for all algorithms	✓	✓	✓	✓	✓	✓
Extreme quality dithering algorithm	✓	✓	✓	✓	✓	✓
Smooth Motion algorithm for displays with no (or poor) 24 FPS support	✓	✓	✓	✓	✓	✓
Automatic optimization of algorithm quality levels	✓	✓	✓	✓	✓	✓
Advanced 3D LUT calibration <sup>3</sup>	✓	✓	✓	✓	✓	✓
Massive 3D and 1D LUTs (up to 256^3 3D and 4,096 point 1D, 12-bit precision)	✓	✓	✓	✓	✓	✓
Free access to the Envy Academy Online course (50 lessons)	✓	✓	✓	✓	✓	✓
Firmware update notices, with one-touch download & installation from Envy menu	✓	✓	✓	✓	✓	✓
Remote technical assistance from authorized dealers ("madAssist")	✓	✓	✓	✓	✓	✓
Highly intuitive user interface, true plug-and-play installation in minutes	✓	✓	✓	✓	✓	✓
Frame packed 1080p24 3D support	✓	✓	✓	✓	✓	✓
IP control (Crestron, Crestron Home, Control4, Savant, RTI, others)	✓	✓	✓	✓	✓	✓
User-friendly menus & help (English, Chinese, French, German, Hindi, Italian, Spanish)	✓	✓	✓	✓	✓	✓
Low-latency gaming mode	✓	✓	✓	✓	✓	✓
3D Luminance Boost (up to 4x brighter to compensate for active shutter glasses)	-	✓	-	✓	✓	✓
Desired SDR Luminance option (to limit SDR brightness)	-	✓	-	✓	✓	✓
SmartMenus (instantly return to previous menu option)	-	✓	-	✓	✓	✓
Direct AV gear integration (AVRs, displays, masking) - no control system needed <sup>5,10</sup>	-	✓	-	✓	✓	✓
Maximum number of profiles	50	Unlimited	50	Unlimited	Unlimited	Unlimited
Built-in test patterns	Standard	Advanced	Standard	Advanced	Advanced	Advanced
Fan curves for cooling and noise reduction	Silent, Balanced, Rack	Silent, Balanced, Rack, Custom	Silent, Balanced, Rack	Silent, Balanced, Rack, Custom	Silent, Balanced, Rack, Custom	Silent, Balanced, Rack, Custom
Remote control included	RC1 Standard Remote (RF)	RC1 Standard Remote (RF)	RC1 Standard Remote (RF)	RC1 Standard Remote (RF)	RC2 Backlit Remote (RF + IR)	RC2 Backlit Remote (RF + IR)
<b>HDMI Input features and capabilities</b>						
Max resolutions and frame rates <sup>2,4</sup>	12-bit 4:2:2 4K60	12-bit 4:2:2 4K60	12-bit 4:2:2 4K60	12-bit 4K120 4:4:4 / 8K60 4:2:0	12-bit 4K120 4:4:4 / 8K60 4:2:0	12-bit 4K120 4:4:4 / 8K60 4:2:0
Display Stream Compression (DSC)	-	-	-	TBD	TBD	TBD
Variable Refresh Rate (VRR)	-	-	-	1 Hz - infinite Hz	1 Hz - infinite Hz	1 Hz - infinite Hz
Auto Low Latency Mode (ALLM)	✓	✓	✓	✓	✓	✓
Quick Media Switching (QMS) & Quick Frame Transport (QFT)	-	-	-	✓	✓	✓
<b>HDMI Output features and capabilities</b>						
Max resolutions and frame rates <sup>1,2</sup>	12-bit 4:4:4 4K120	12-bit 4K120 4:4:4 / 8K60 4:4:4	12-bit 4:4:4 4K120	12-bit 4K120 4:4:4 / 8K60 4:4:4	12-bit 4K120 4:4:4 / 8K60 4:4:4	12-bit 4K120 4:4:4 / 8K60 4:4:4
Display Stream Compression (DSC)	✓	✓	✓	✓	✓	✓
Variable Refresh Rate (VRR)	-	120 Hz, 240 Hz, 360 Hz	-	120 Hz, 240 Hz, 360 Hz	120 Hz, 240 Hz, 360 Hz	120 Hz, 240 Hz, 360 Hz
<b>Product Roadmap<sup>2,4</sup></b>						
DeintAI™ (AI *film* mode deinterlacing for Blu-rays and broadcast TV)	✓	✓	✓	✓	✓	✓
Additional undisclosed basic algorithms and features	✓	✓	✓	✓	✓	✓
Multi-zone Convergence Correction	-	✓	-	✓	✓	✓
Advanced native gamut calibration	-	✓	-	✓	✓	✓
AI HDR dynamic tone mapping processing	-	✓	-	✓	✓	✓
Additional undisclosed advanced algorithms and features	-	✓	-	✓	✓	✓
Additional undisclosed basic AI algorithms and features	-	-	-	-	✓	✓
Additional undisclosed advanced AI algorithms and features	-	-	-	-	-	✓
AI motion compensated multi frame noise/grain reduction	-	-	-	-	-	✓
AI motion compensated video deinterlacing	-	-	-	-	-	✓
DeintAI™ Level 2 (AI motion compensated deinterlacing)	-	-	-	-	-	✓
AI grain agnostic sharpening	-	-	-	-	-	✓
ChromaAI (next-generation chroma upscaling)	-	-	-	-	-	✓

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<b>Hardware and Miscellaneous</b>						
Paid option for future hardware upgrades	-	-	-	-	-	✓
Warranty on parts and labor	2 Years	4 Years	2 Years	4 Years	5 Years	5 Years
CPU processing power (cores / threads) <sup>7</sup>	4 / 8	4 / 8	6 / 12	6 / 12	6 / 12	6 / 12
RAM <sup>6</sup>	Standard, Single Channel	Standard, Single Channel	Dual Channel	Dual Channel	ECC, Dual Channel	ECC, Dual Channel
General graphics processing power (GFLOPS) <sup>7</sup>	11,200	11,200	19,000	19,000	19,000	43,000
Specialized AI graphics processing power (Tensor core GFLOPS) <sup>7</sup>	60,500 - 121,000	60,500 - 121,000	77,000 - 154,000	77,000 - 154,000	77,000 - 154,000	172,000 - 344,000
HDMI input ports <sup>4</sup>	1x HDMI 2.0, HDCP 2.2 18G	1x HDMI 2.0, HDCP 2.2 18G	1x HDMI 2.1, HDCP 2.3 48G <sup>12</sup>	1x HDMI 2.1, HDCP 2.3 48G	1x HDMI 2.1, HDCP 2.3 48G	1x HDMI 2.1, HDCP 2.3 48G
HDMI Zero-latency pass-thru HDMI port <sup>4</sup>	1x HDMI 2.0, HDCP 2.2 18G	1x HDMI 2.0, HDCP 2.2 18G	1x HDMI 2.1, HDCP 2.3 48G <sup>12</sup>	1x HDMI 2.1, HDCP 2.3 48G	1x HDMI 2.1, HDCP 2.3 48G	1x HDMI 2.1, HDCP 2.3 48G
HDMI 2.1 HDCP 2.3 48G output ports	1	1	1	1	1	1
DisplayPort output ports (future expansion) <sup>2,4,8</sup>	1x DisplayPort 1.4a	1x DisplayPort 1.4a	1x DisplayPort 2.1b	1x DisplayPort 2.1b	3x DisplayPort 2.1b	3x DisplayPort 2.1b
Wake-On-HDMI (optionally powers Envoy on when HDMI signal is detected)	-	-	-	✓	✓	✓
Power consumption	60W - 205W	60W - 205W	60W - 250W	60W - 250W	60W - 250W	60W - 450W
AC power input	100V - 240V	100V - 240V	100V - 240V	100V - 240V	100V - 240V	100V - 240V
AC power frequency	50Hz - 60Hz	50Hz - 60Hz	50Hz - 60Hz	50Hz - 60Hz	50Hz - 60Hz	50Hz - 60Hz
<b>Dimensions and Weight</b>						
Rack mount ears and screws included	✓	✓	✓	✓	✓	✓
Rack units <sup>9</sup>	2U	2U	2U	2U	4U	4U
Unit dimensions with feet (W x D x H)	17.25 x 13.5 x 4.1" 438 x 343 x 104 mm	17.25 x 13.5 x 4.1" 438 x 343 x 104 mm	17.25 x 13.5 x 4.1" 438 x 343 x 104 mm	17.25 x 13.5 x 4.1" 438 x 343 x 104 mm	17.31 x 17.44 x 7.56" 440 x 443 x 192 mm	17.31 x 17.44 x 7.56" 440 x 443 x 192 mm
Shipping dimensions (W x D x H)	23 x 18 x 9" 594 x 467 x 235 mm	23 x 18 x 9" 594 x 467 x 235 mm	23 x 18 x 9" 594 x 467 x 235 mm	23 x 18 x 9" 594 x 467 x 235 mm	23 x 26 x 14" 583 x 660 x 356 mm	23 x 26 x 14" 583 x 660 x 356 mm
Shipping weight	24 lbs (10.9 Kg)	24 lbs (10.9 Kg)	24 lbs (10.9 Kg)	24 lbs (10.9 Kg)	46 lbs (20.9 Kg)	48 lbs (21.8 Kg)
<sup>1</sup> Using HDMI 2.1 output. Some signal formats may require DSC. <sup>2</sup> TBD or estimated. <sup>3</sup> Supports Calman and ColourSpace with Envoy calibration engine V2. <sup>4</sup> Subject to change without notice. <sup>5</sup> For devices connected to the same local network as the Envoy. <sup>6</sup> ECC RAM self-corrects errors, enhancing stability; usually only found in professional workstations. <sup>7</sup> Or better. <sup>8</sup> Not yet available; under consideration for technical feasibility and use cases. <sup>9</sup> Ideally racked above a component that does not generate a lot of heat. <sup>10</sup> Coming soon. <sup>11</sup> Supports both Subtitles and Closed Captioning. <sup>12</sup> Hardware is full HDMI 2.1 48G, but operates as HDMI 2.0 18G without Core MK2 Premium Pack						

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