

ZEISS VELVET 4K

Discover the Most Lifelike Digital Solution for Planetariums



Seeing beyond



Developed and manufactured by ZEISS, the VELVET 4K is the fourth generation of digital projectors designed in every respect for astronomical presentations in planetariums. This projector combines unsurpassed contrast with breathtakingly lifelike colors to deliver the best possible video projection in a planetarium.

The new RGB solid state laser light sources extend the color space to the modern Rec. 2020 standard. They have a rated life of 50,000 hours, and are ready to operate immediately upon being switched on. For most planetariums this allows operation for up to fifteen years. And of course, ZEISS guarantees spare part availability and maintenance for 10 years, which is absolutely unique in planetarium industry.

VELVET 4K offers a true black background for image projection, resulting in an unbeatable 5,000,000 : 1 contrast, everything you need for brilliant stars in a pitch black sky. Thanks to the integrated blending system, there are no visible transitions between the image channels, even with bright content. In hybrid operation, the digital projection perfectly complements the starry sky from the star projector without any surface brightening.

VELVET 4K features top-class ZEISS optics that guarantee impressive images. VELVET 4K projectors make you forget about blurring, visible edge transitions, and brightness and color variations between channels, and provide a projection quality for any type of content that no standard projector can deliver.

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Projector

Image format Resolution	4K DCI 4096 px to 2160 px, native (up to 240 Hz)
Display technology	0.98" 4K Digital Mirror Device ZEISS True Black Projection Technology
Lenses	ZEISS Digigon dome lenses Z series (planar image field) with motorized zoom/focus
Transmission ratio (lens)	0.92 (ZEISS Digigon dome lenses)
Contrast ratio (on-off, static)	5,000,000 : 1
Color rendition	30 bit RGB (10 bit per color channel)
Color gamut	Rec. 2020
Brightness (blended operation mode)	3,000 lm effective output after transition through full lens system
Light source rated life	True RGB solid-state laser 50,000 h
Blending	internal 10 bit full software controlled blending system, no masks in front or inside the lens
Signal input	4x DisplayPort v1.4
Frame rate	60 Hz - 240 Hz, Upscaling capabilities up to native resolution
3D capability	yes
Control interface	RJ45 TCP/IP 100/1000 network
Width x Height x Depth	500 mm x 500 mm x 680 mm (19 2⁄3 in x 19 2⁄3 in x 26 4⁄5 in)
Operating voltage	100 V - 240 V AC 50 Hz - 60 Hz
Power consumption	max. 900 VA (normal operation)
Weight	50 kg (110 lbs) without lens
Mounting options	Orientation free, no limitation
Operating temperature	15 °C - 30 °C (59 °F - 86 °F) optimal 20 °C - 25 °C (68 °F - 77 °F)
Storage and shipping temperature	-10 °C - 55 °C (14 °F - 131 °F, within Velvet shipping box)
Temperature variation	max. 5 °C / h
Relative humidity	20 % - 70 %, no condensation
Spare part availability	10+ years
Service availability	10+ years

Full dome Systems and Immersive Environments

Dome diameters	4.5 m - 30 m (15 ft - 98 ft; diverse configuration options)
Dome tilt	no limitation
Dome reflectivity	35 % - 65 % recommended (project specific)
Dome configurations	1 - 10+ channels
Color-matching	high accuracy across all channels
Black-level	highest performance across all channels (ZEISS True Black Projection Technology)
White level	consistent white level across all channels
Pixel uniformity	highest accuracy with ZEISS Digigon dome lenses (optimized for curved screens)
Channel overlap	narrow overlap area, resulting in the lowest pixel loss and highest panel utilization
Remote support	optional, internet connection required
Hybridization	Perfectly compatible with all ZEISS star projectors

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