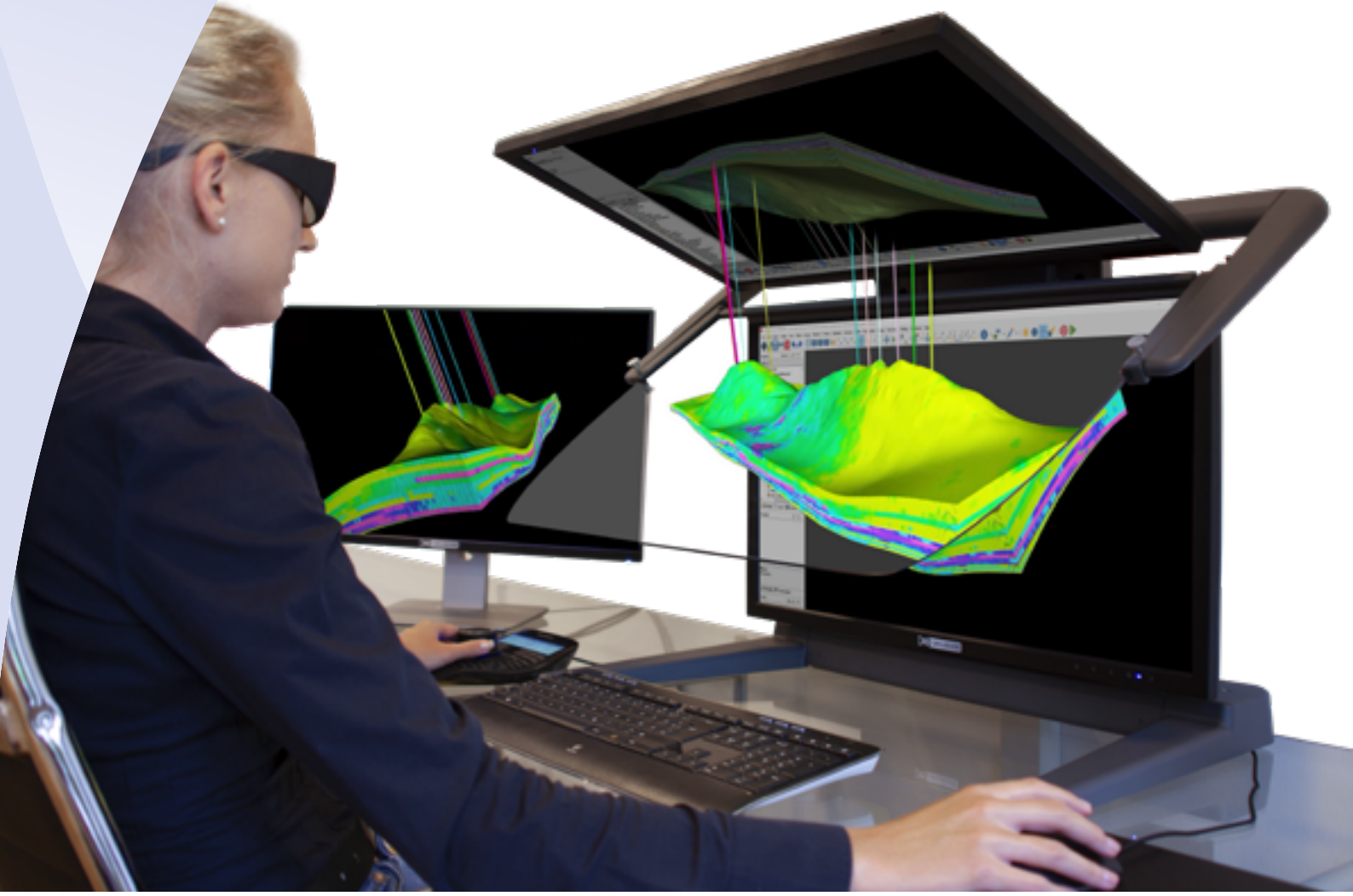
PLANAR Beamsplitter &
NVIDIA 3D Vision Replacement

akili 3D
TECHNOLOGIES & SOLUTIONS

3D PluraView

3D Visualization for Oil & Gas Applications



- Flicker-free for continuous, professional use
- Highest brightness – Daylight suitable
- Two assembly sizes – 22”/24” and 27”/28”
- Wide Viewing Angle – Group interaction
- Compatible with all 3D-Stereo Software
- Resolutions in FullHD, 2.5K or 4K (UHD)

3D PluraView | Passive 3D-Stereo Monitors for the Oil & Gas Industry

3D PluraView – stereoscopic 3D-visualisation for the oil- and gas industry

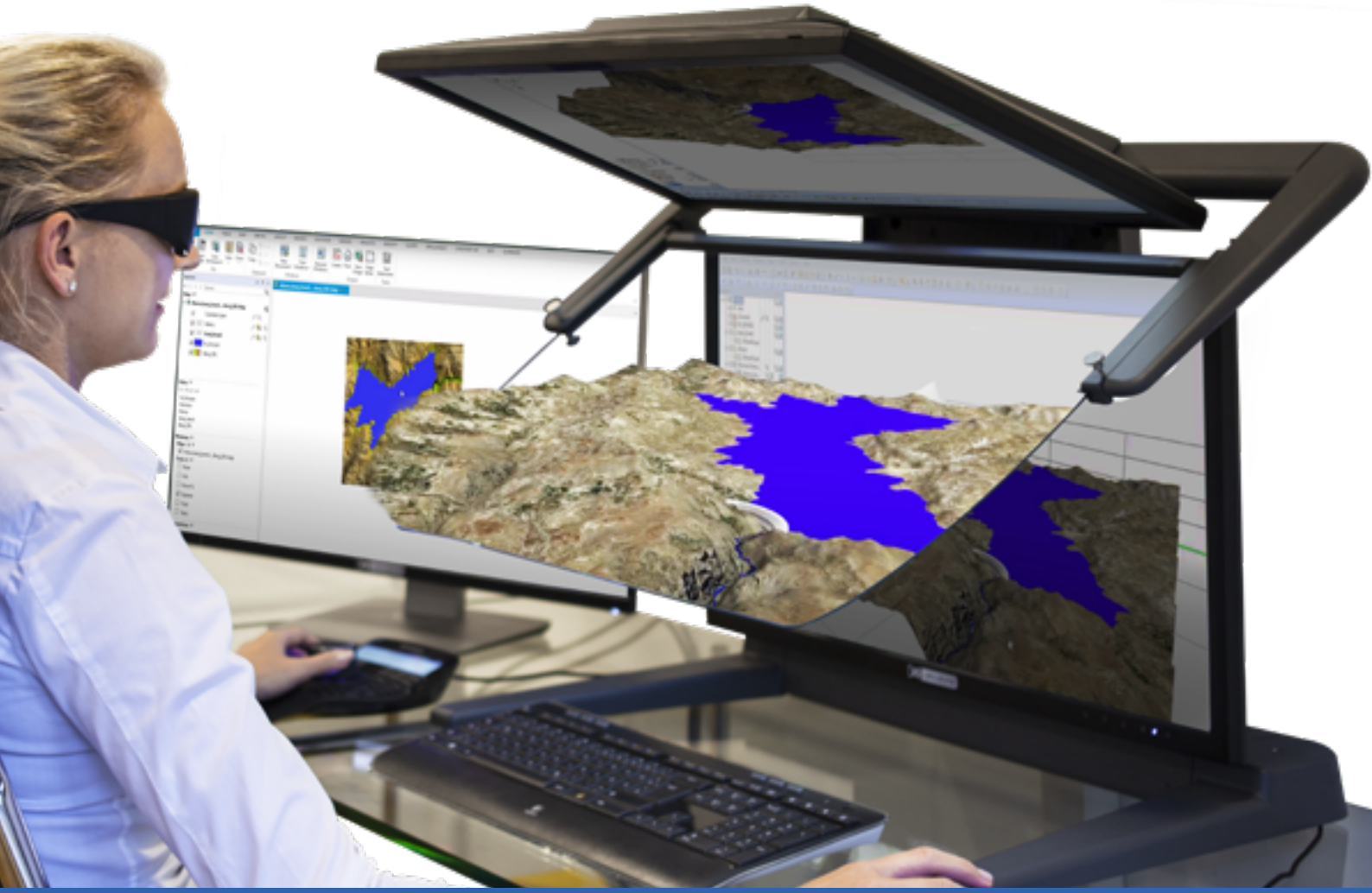
Optimum visualization for stereoscopic 3D geo-datasets at the workplace

In order to optimize the exploration and production of oil and gas fields, assess potential and increase yield, it is mandatory to understand all aspects of the geological subsurface situation. A higher level of understanding will lead to an earlier recognition of problems, reduce avoidable delays and associated, substantial expenses. The optimal visualization of 3D geo-datasets is the key for geologists and geophysicists to analyze and evaluate geological and geophysical information components with the highest degree of confidence. The stereoscopic 3D PluraView dual-screen systems with integrated beam splitter mirror from Schneider Digital, offer such an optimal 3D visualization right at the workplace. With up to 4K resolution per screen and stereo-channel, the user benefits from a readily available, extremely bright and high-contrast 3D-stereo display on his/her desktop, when evaluating stratigraphic profiles, seismic 3D data, borehole information and derived 3D models. In the oil and gas industry, stereo-capable software platforms, such as Petrel from Schlumberger, Halliburton GeoProbe or MapInfo Discover are utilized. These allow the professional user to integrate, display and analyze all relevant subsurface information components quickly and comprehensively, display variants and associated simulations, improve play understanding and ultimately support more accurate hydrocarbon recovery forecasts. The visualization in 3D-stereo is an integral part of a 'best-practice toolkit', ensuring the success of the project.

Petroleum engineers and geoscientists spend a substantial amount of time combining 2D and 3D data sets from multiple sources to create interpolated 3D digital subsurface models. These datasets are used extensively over longer periods of time by the oil and gas industry in a variety of formats, with varying resolutions and in very large volumes. The stereoscopic monitors of the 3D PluraView series offer the highest stereoscopic display quality at the workplace with their proven beam splitter technology. They are the decisive interface for the visualization, for the creation and analysis of digital 3D 'twins'. All recorded surface and subsurface structures, as well as dynamic processes that are relevant for the exploration and production of oil and gas fields, can be visualized on the stereoscopic 3D monitors from Schneider Digital. True stereoscopic visualization not only makes it easier to interpret 3D data, it also dramatically improves collaboration between exploration and production team members. Several specialists can view, analyze and discuss a dataset simultaneously on a 3D PluraView. They benefit from the impressive, holographic representation of the geospatial data in a normal, not specially prepared or darkened office environment and a flexible viewing angle of almost 180 degrees.

Benefits of 3D stereo visualization technology for oil and gas companies:

- 3D PluraView monitors are fully compatible with almost any workstation, even laptop hardware. Most professional software applications require only a standard professional graphics card for visualization.
- No need for special drivers or IT configurations, no stereo signal emitters, as required by active shutter glasses. 3D PluraView monitors work with standard NVIDIA or AMD graphics drivers and are futureproof, operating with the latest Windows or Linux versions.
- Absolutely flicker-free and therefore permanent, comfortable usage thanks to very light, passive and cross-polarized stereo glasses.
- Shared stereoscopic viewing for small workgroups of two to six users, especially with the 27“ and 28“ 3D PluraView models.
- Fully integrated and usable in normal office daylight environments due to bright and high-contrast displays with up to 4K resolution per stereo channel.
- True spatial depth perception in 3D-stereo display mode, promoting an intuitive and faster understanding of stratigraphic and tectonic features and relationships.
- Best 3D-stereo visualization solution for geospatial professionals and engineers, supporting all stereoscopic features of leading software applications.
- Substantial decision support through 3D visualization, better validation of work results as well as error avoidance and less scope for misinterpretations.



Optimum visualization for stereoscopic 3D geospatial at the workplace

Comfortable interaction and measuring in 3D-Stereo

The 3D PluraView monitors are ideally suited to display 3D subsurface reservoir models stereoscopically in 3D, together with detailed surface datasets. With two high-resolution screens, the stereoscopic image pairs for the left and the right eye are combined by the so-called 'beam splitter', a specially coated, transflective mirror, to form a very bright and high-contrast holographic stereo image. Due to the different polarization angle of the PluraView glasses, both stereo channels are separated for the left and the right eye, resulting in a perfect 3D-stereo display for the professional desktop.

The stereoscopic visualization is an essential part for the industry's geology software, such as Schlumberger Petrel, Halliburton GeoProbe, Baker Hughes JewelSuite, the Dassault GEOVIA Modules or MapInfo Discover. As the global market leader in the GIS sector, Esri has implemented with ArcGIS Pro a fully stereoscopic 3D GIS environment. ArcGIS Pro enables also the mapping of stratigraphic and tectonic subsurface structures with 3D voxel elements.

The visualization and especially the editing of spatial structures in a 3D-stereo environment is definitely a key function. With a stereoscopic display, real spatial relationships can be understood immediately and intuitively and can be captured with great precision, compared to regular screens which can only display a flat 2D-perspective view, without any depth information.

Modern software environments for exploration and production are always three-dimensional and volumetric. Due to the high costs and risks involved, they must be as efficient as possible, reliable and optimized in terms of data processing. The ensuing field activities must meet all HSE standards and therefore the entire process chain must verifiably and fully correspond to the current state of the art and 'best practice'.

3D PluraView Applications

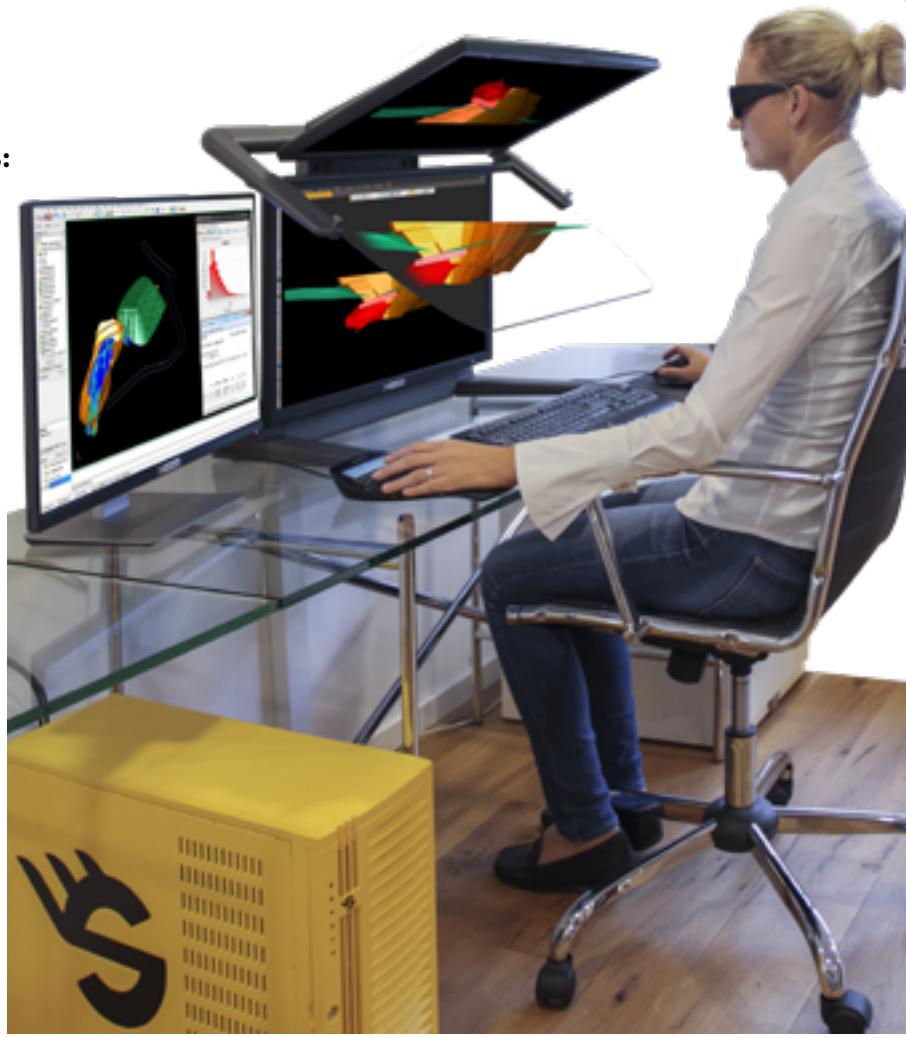
Compatible with all leading software applications

The 3D PluraView monitors by Schneider Digital represent the current 'state-of-the-art' for 3D hardware technology. They are by far the most practical and highest resolution 3D-stereo desktop systems currently available and are designed for fatigue-free, daily use in standard office environments, being the the perfect visualization solution for:

- 3D spatial data visualization for stratigraphic and tectonic surfaces
- Interpretation of 3D seismic data
- Integration of 3D surface and subsurface datasets
- Assessment and analysis of reserves
- Play development planning
- 3D modeling of property rights
- Preparation and visualization of directional drilling pathways
- Reservoir simulation, pressure drop modeling
- Dynamic modeling of finite elements (FEM)
- Oil & Gas 3D printing applications
- Software training for geologists, geophysicists, petroleum engineers
- Geo-scientific education
- Industrial plant simulation / installation of production equipment

Overview of the most important 3D PluraView compatible oil & gas applications:

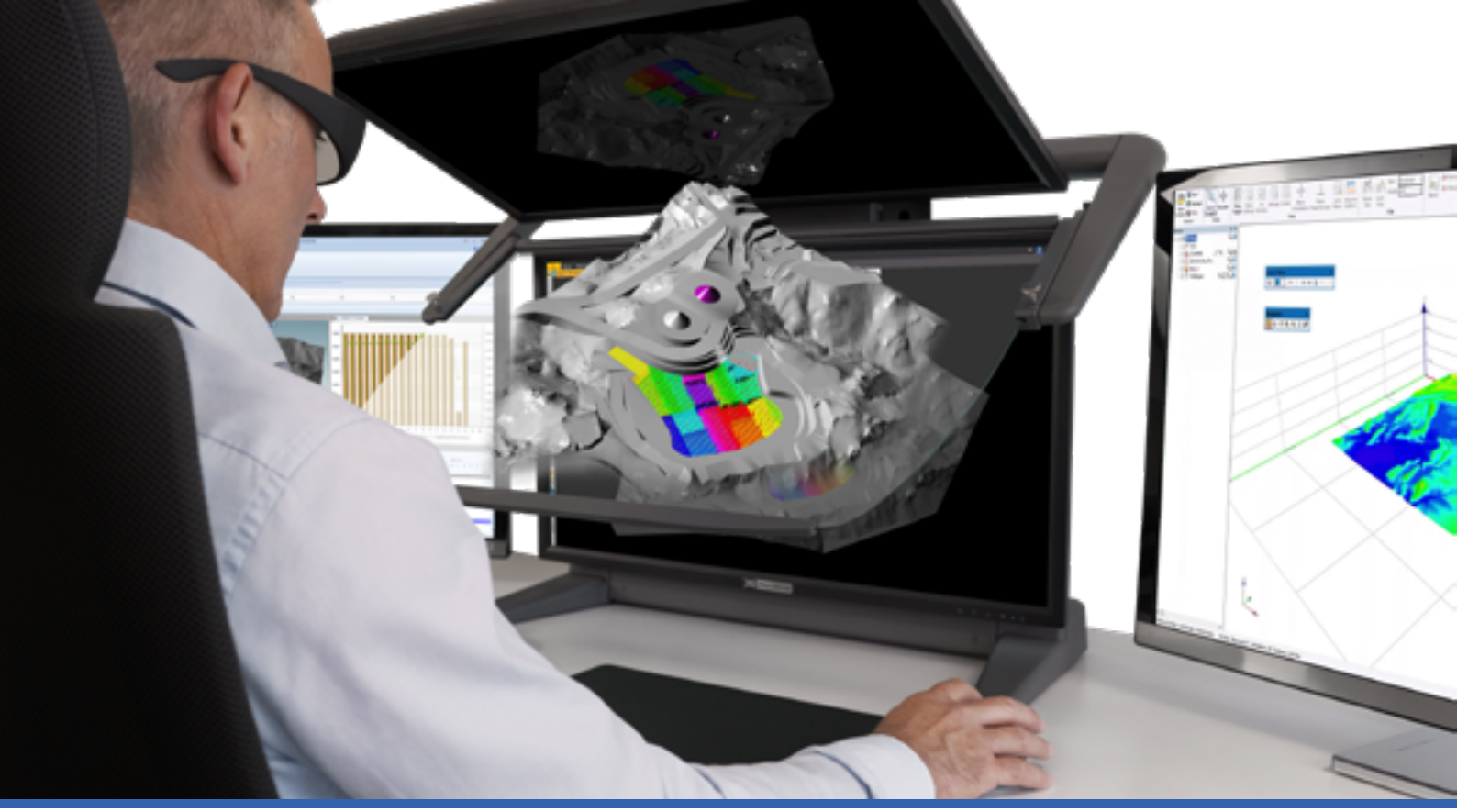
JewelSuite	Mapinfo Discover 3D
VoxelGeo	GeoProbe
Kingdom	VOG
Geovia MineShed	Geovia Surpac
Geovia PCBC	Geovia GEMS
Geovia MINEX	Petrel



The current and up-to-date list of 3D PluraView-supported software applications is available for download at:
https://www.3d-pluraview.com/en/application-field

Software Certified for all 3D stereo applications

List of all applications ›



Reliably authorize exploration results through 3D models

A comprehensive and accurate understanding of the available 3D geological and geophysical data is required to comprehend the stratigraphic and tectonic structures, as well as the rock properties of oil and gas reservoirs in relation to their production potential. Among other things, seismic 3D profiles are recorded for this assessment, to identify reflective horizons, structures and faults. Together with results from other data sources, such as existing well logs, aero-magnetics and electrical resistivity tomography, all information is merged to create the most competent 3D reservoir model possible. If the evaluation is positive, this preliminary model will then be expanded by additional geo-datasets to support justifiable decisions about the future number, positioning, direction and depth of additional exploration boreholes, or the drilling of the first production wells.

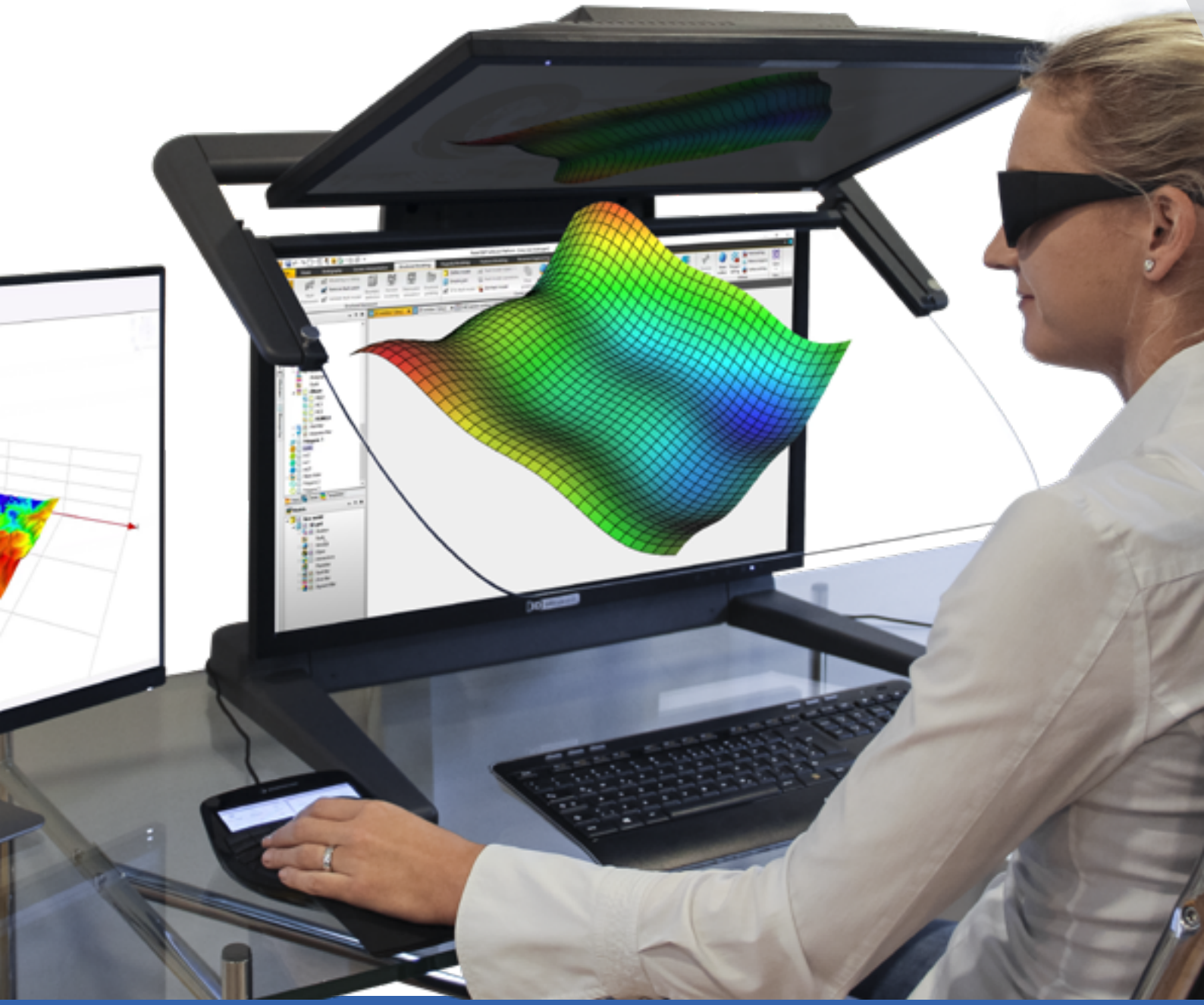
The representation of the reservoirs in “real” 3D is also ideal for creating comprehensive static and especially dynamic models in 4D time-lapse series for clearly simulating pressure drop and flow changes under various production scenarios. The best-possible combination, evaluation and interpretation of various 3D features is essential for the closest digital representation of the reservoir. This includes all major tectonic structures such as sealing or non-sealing faults and the modeling of stratigraphic layers. In particular, it includes as much information as possible about the source-, reservoir- and cap rock layers. Highly relevant are the accurate depth and structure of reflection horizons from geophysical exploration, combined with all physically present rock material from drill cuttings and core samples within the investigation area, as well as the determination of further petrophysical rock parameters by geophysical downhole probes. A “good” subsurface model shows the spatial relationships and properties of relevant features in sufficient detail and can therefore be used with acceptable accuracy to estimate the future behavior of an oil and gas reservoir under different production scenarios.

With the stereoscopic visualization technology from Schneider Digital, it is possible to perfectly visualize the correct spatial relationships of reservoir structures and their properties. →

This allows oil and gas engineers to evaluate potential reservoirs, estimate reserves, and predict reservoir properties and production behavior. It enables them to further optimize production setup, complete projects on time and on budget, and ultimately increase the company's competitiveness and profitability.

Especially at the transition point from exploration to production activities and associated surface installations, not only economic aspects are relevant, but strict environmental protection measures also have to be taken into account. Meeting associated requirements for official approval procedures are critical project milestone issues. Geospatial datasets that have been prepared on the desktop on 3D PluraView systems can be visualized just the same on large-format, stereoscopic projection systems and LED walls for larger groups of viewers, for instance for the company decision makers and public officials and thus presented in a much more easily understandable way.

The 3D PluraView monitors are the key element for geologists, geophysicists and engineers to create, visualize, analyze and understand complex 3D subsurface datasets, increasing confidence and leading to better-informed management processes throughout the project.



Performance-Workstations

Schneider Digital has specialised in customised hardware solutions for professional 3D graphics applications since 1995. Our focus for the configuration and build of high-performance workstations and servers is on uncompromising quality and perfect matching of all components. We guarantee a reliable, long service life with the option to upgrade individual components at a later stage.

Through our close cooperation with hardware manufacturers, software companies, universities and research institutes, we have first-hand knowledge about the latest hardware and software developments. Equally important to us is the close and trusted contact to our global hardware customers. This extensive knowledge-base is really key to building workstation solutions that are tailored to your specific requirements, meet and exceed your expectations.

The challenge for geospatial applications is the combination of loading large amounts of data quickly and visualising them stereoscopically on a suitable 3D monitor. Latency-free work with extensive 3D-stereo datasets, such as detailed, large-area geology models is only possible, if all hardware and software components are perfectlly matched.

Thanks to additional sound insulation and special cooling solutions, our workstations are also very pleasant office „companions“.

High-end workstation solutions for complex geospatial requirements

- Latest Intel XEON, AMD EPYC or AMD Ryzen Threadripper PRO technology
- High clock speed processors (up to 2x 38 cores on the Intel XEON platform, up to 2x 64 cores with AMD Threadripper PRO and EPYC)
- Up to 4 TB fast DDR-4 ECC RAM
- Up to four (4x) high-end graphic cards for AI, CUDA and OpenCL applications in a single workstation
- High-performance NVMe RAID with write and read speeds of more than 25,000 MB/s and 256 TB internal SSD storage capacity
- Optional, ultra-fast 100GbE LAN connection
- IPMI interface for secure and complete workstation management
- 19“ rack-mounted cluster solutions
- Only highest-quality components are used

3D-Controller

Perfect measuring instruments for GIS, photogrammetry and mapping

3D controllers, also known as ‚3D mice', are high-performance, ergonomic interfaces designed to increase productivity and comfort when interacting with 3D data sets. Freely programmable buttons can be assigned to functions and macros without the user having to take his hands off the controller. Even in combination with a ‚normal' mouse, 3D controllers are optimally designed to support 3D visualisation and digitisation functions in the field of GIS, photogrammetry, mapping and CAx.

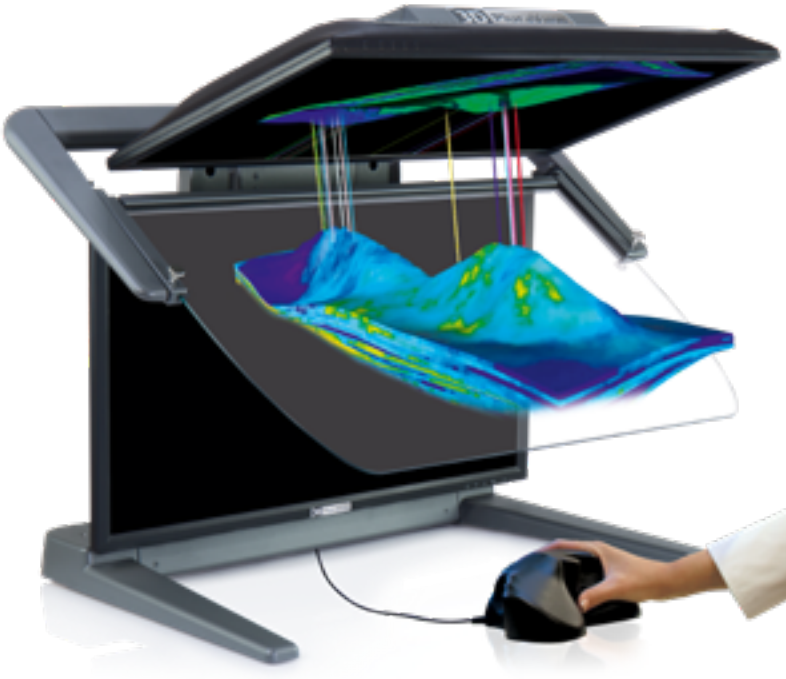
Functions & benefits

- Supported by ALL photogrammetry software applications
- Manufactured in the USA with patented design (patent numbers D457884 (S1), D615980 (S3), D718309 (S4))
- Comfortable, ambidextrous usability for GIS, photogrammetry and surveying applications
- The optical mouse with its high-resolution laser works excellently on ALL non-reflective surfaces and requires no maintenance
- The Z-wheel with a resolution of 1024 steps per rotation enables a fast and precise measuring function
- High-precision X-Y laser navigation for precise position control. Long-life buttons with tested 10 million actuations ensure a long service life.

Stealth 3D Mouse

3Dconnexion

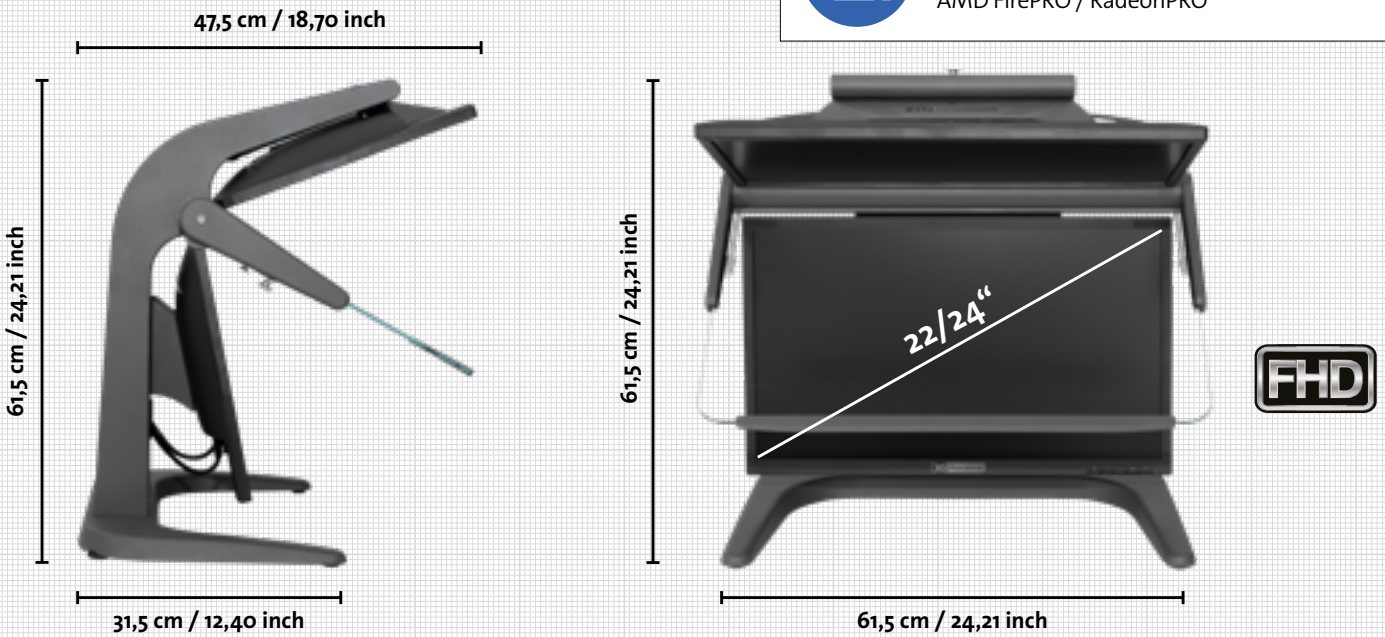
3Dconnexion controllers have their origins in robotics and space exploration and are leading the way for all 3D model interaction requirements. The controllers offer full navigation control with up to six degrees of freedom. Their robust and durable industrial design makes them a powerful tool for all oil & gas applications.



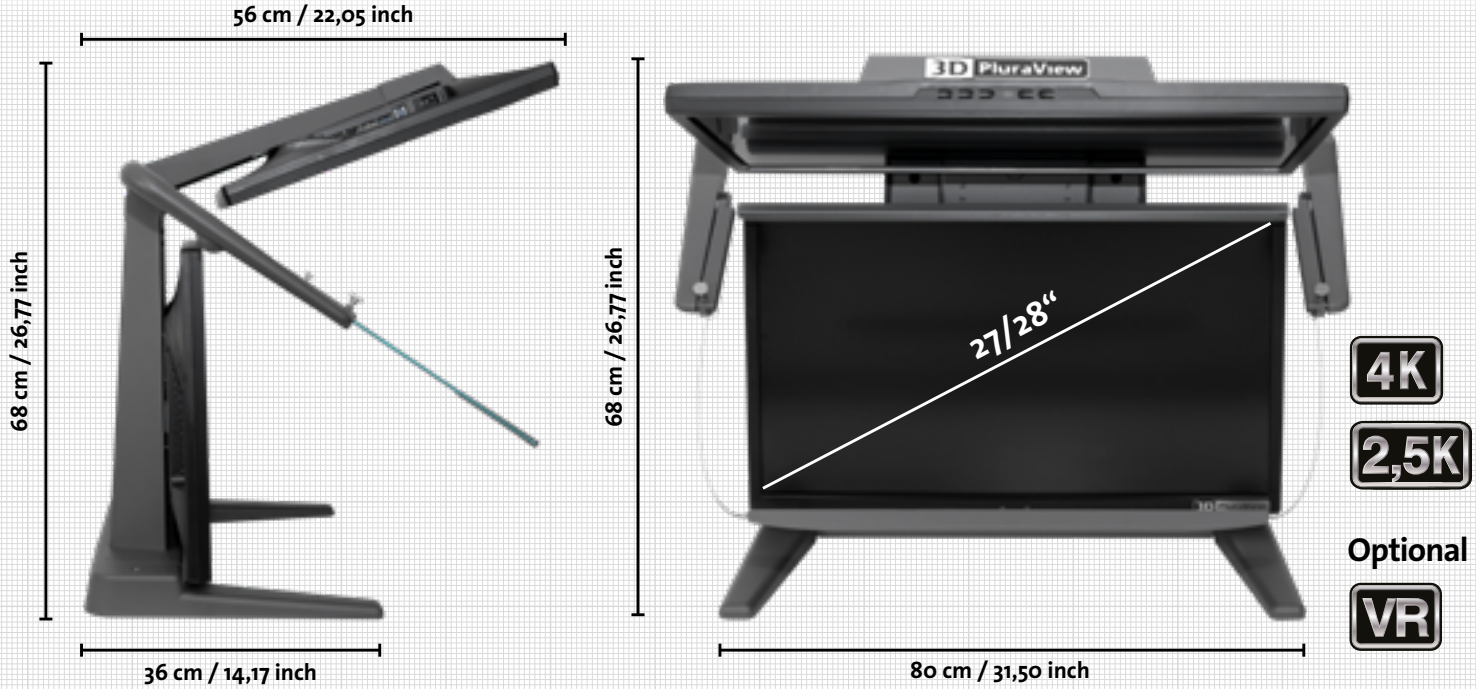
3D PLURAVIEW MONITOR SPECIFICATIONS		
	22" FHD	**24" FHD**
Display	21.5" (546 mm) Screen Size 2x 1,920 x 1,080 Resolution (2.1 MP) 16.7 Million Colors (8-bit) 250 cd/m² Brightness	24" (610 mm) Screen Size 2x 1,920 x 1,080 Resolution (2.1 MP) 16.7 Million Colors (8-bit) 350 cd/m² Brightness
	LED BackLit-Technology 2 ms Response Time 170 °/160 ° Viewing Angle (H/V)	LED BackLit-Technology 1 ms Response Time 170 °/160 ° Viewing Angle (H/V)
	Contrast Ratio: 200,000: 1 ACR	Contrast Ratio: 1,000 : 1 static
Frame Rate	60 Hz	144 Hz
3D-Characteristics	160 cd/m² Brightness with glasses 1,920 x 1,080 per eye resolution	210 cd/m² Brightness with glasses 1,920 x 1,080 per eye resolution
	Linear Polarization 45°/135° beam-splitter: 50%-transparency, polarized mirror	
3D-Formats	Quad Buffered OpenGL, Side-by-Side, Top-Bottom, Quad-Buffered DirectX	
Operating Systems	Windows / Linux / macOS-Compatibility, Windows-10 und Windows-11 Certification	
Power Consumption	Power Consumption 53W typical; max. 1W in Power Management Mode; Annual Power Consumption 94 kWh / year	Power Consumption 61W typical; max. 1W in Power Management Mode; Annual Power Consumption 135 kWh / year
	Power Management VESA DPMS™, Energy Star 6.0 Efficiency Class B	
Weight	23 kg system weight with stand	26 kg system weight with stand
Measurements	54 x 59 x 46 cm (W x H x D)	61.5 x 61.5 x 47.5 cm (W x H x D)
Interfaces	2x DisplayPort 1.1 cable 2.5m	2x DisplayPort 1.2 cable 2.5m
	1 x main plug AC 100 - 240 V, 50 / 60 Hz	
Audio	Integrated Speakers 2 x 2 W	
Design	Diamond Dark Alu/Steel Construction Integrated Electronics Adjustable Stand Made in Germany	
Technical Notes	2x DisplayPort 1.1 output from the graphics card is required, optionally available as dual DVI version	2x DisplayPort 1.2 output from the graphics card is required for 144Hz; with DP 1.1 output - 120Hz screen refresh. FreeSync support with AMD graphics cards
Graphics Card Requirements	Any Quad-Buffer capable NVIDIA Quadro and AMD FirePRO / RadeonPRO cards, which have at least 2x DisplayPort 1.1 monitor outputs. It is recommended to use an additional side monitor for the 3D PluraView system, which is adapted to the polarization of the stereo system.	
Warranty	1 year manufacturer warranty, with optional carepack extended up to 5 Years	

Supported Graphics Cards:
All NVIDIA Quadro & all
AMD FirePRO / RadeonPRO

List of all cards ›



3D PLURAVIEW MONITOR SPECIFICATIONS		
	27" 2,5K	**28" 4K/UHD**
Display	27" (686 mm) Screen Size 2x 2,560 x 1,440 Resolution (3.7 MP) 16.7 Million Colors (8-bit) 350 cd/m² Brightness	28" (711 mm) Screen Size 2x 3,840 x 2,160 Resolution (8.3 MP) 1,073 Billion Colors (10-bit*) 300 cd/m² Brightness
	LED BackLit-Technology 1 ms Response Time 170 °/160 ° Viewing Angle (H/V) BlackTuner for enhancement of shadow areas	
	Contrast Ratio: 80,000,000 : 1 ACR	Contrast Ratio: 12,000,000 : 1 ACR
Frame Rate	60 Hz	60 Hz
3D-Characteristics	210 cd/m² Brightness with glasses 2,560 x 1,440 per eye resolution	180 cd/m² Brightness with glasses 3,840 x 2,160 per eye resolution
	Linear Polarization 45°/135° beam-splitter: 50%-transparency, polarized mirror	
3D-Formats	Quad-Buffered OpenGL, Side-by-Side, Top-Bottom, Quad Buffered DirectX	
Operating Systems	Windows / Linux / macOS-Compatibility, Windows-10 und Windows-11 Certification	
Power Consumption	Power Consumption 75W typical; max. 1W in Power Management Mode; Annual Power Consumption 131 kWh / year	Power Consumption 98W typical; max. 1W in Power Management Mode; Annual Power Consumption 173 kWh / year
	Power Management VESA DPMS™, Energy Star 6.0 Efficiency Class B	
Weight	25 kg system weight with stand	26 kg system weight with stand
Measurements	80 x 68 x 56 cm (W x H x D)	80 x 68 x 56 cm (W x H x D)
Interfaces	2x DisplayPort 1.2 cable 3m 2x USB 2.0	2x DisplayPort 1.2 cable 3m 2x USB 3.0
	1 x main plug AC 100 - 240 V, 50 / 60 Hz with power switch and fuse 3.15 A	
Audio	Integrated Speakers 2 x 2.5 W	Integrated Speakers 2 x 3 W
Design	Diamond Dark Aluminum Construction Integrated Electronics Adjustable Stand Made in Germany	
Technical Notes	2x DisplayPort 1.1 output from the graphics card is required AMD FreeSync support graphics cards	2x DisplayPort 1.2 output from the graphics card is required for 60Hz; with DP 1.1 output - 30Hz screen refresh. AMD FreeSync support graphics cards
Graphics Card Requirements	Any Quad-Buffer capable NVIDIA Quadro and AMD FirePRO / RadeonPRO cards, which have at least 2x DisplayPort 1.1 monitor outputs. It is recommended to use a side monitor for the 3D PluraView system, which is adapted to the polarization of the stereo system. * The feature 10-bit color depth with Quad-Buffer 3D stereo only works with AMD graphics cards.	
Warranty	1 year manufacturer warranty, with optional carepack extended up to 5 Years	



3D PluraView - The Reference for passive 3D-Stereo Monitors

With over 3,000 units of the 3D PluraView systems currently in use worldwide, the PluraView monitors are compatible with over 300 stereo-enabled software applications. They are the market leader and established reference for professional 3D-stereo visualization.

- **High Resolution**
- **Flicker Free**
- **Daylight Suitable**
- **Wide Viewing Angle**
- **Compact Design**
- **Functional Design / Highest quality**
- **NVIDIA & AMD supported**
- **Plug & Play**
- **Software Certified**

akili 3D
TECHNOLOGIES & SOLUTIONS

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