

professional projector for high quality  
images in challenging applications

## F22 series

sxga+, 1080p, wuxga resolution

24/7 operation warranty

high quality glass optics

range of lenses and lens shift

*Designed and manufactured in Fredrikstad, Norway.*



## professional projector series

The projectiondesign professional series of projectors include high resolution, high performance products conceived and made especially for graphically challenging applications such as scientific visualisation, motion simulation, medical imaging, and public displays.

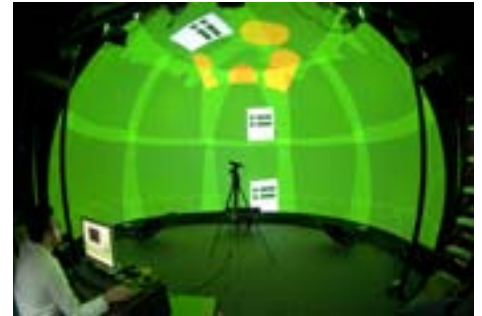
Our utmost concern is image quality and operational reliability, and all professional series projectors are available with 24/7 operation warranties, and a wide range of configuration options to ensure the best possible application fit and customer satisfaction.

# F22 series

The projectiondesign F22 series of DLP® projectors is our entry level professional model. It shares multiple features and performance benefits with our larger and more costly models, such as unique colour matching and calibration possibilities, multiple lens options, and our unmatched 24/7 operation warranty.

### Markets and applications

The F22 series is perfectly suited for installations with relatively small screen sizes, or for installations where multiple images are viewed simultaneously. Either as parts of a single display, or separated into tiles, including public displays such as museums and entertainment centres, small domes or points of display, and small visualization screens and simulators. Thanks to its small size and resolution options, it is also a perfect board room projector.



*A total of thirteen F22 series projectors are blended into a single image in a military simulation projector. The F22 series, thanks to its small size, and flexible lens configurations, is perfect for this type of application, and reduces complexity and real estate requirements to a minimum. Images courtesy of Air Force Research Lab (AFRL) Mesa, AZ, USA.*

### Multiple resolution options

The projectiondesign F22 series can be configured with several resolution options, from WUXGA through 1080p and SXGA+, down to 720p formats. With a multitude of aspect ratios, it caters for all requirements, such as native 16:10 for popular computer formats, legacy 4:3 for tiling, and 16:9 for video.

### DLP® technology – chosen for reliability

The F22 series uses DLP technology like all our other professional projectors. It has been chosen for its unique combination of image quality – high brightness and contrast, and natural colours – compact system size possibilities, and most importantly, its unmatched reliability. Thorough and independent testing has



*Image courtesy of Royal National Lifeboat Institute & Antycip Simulation.*



proven DLP technology to be the most reliable of all microdisplays. Inorganic by design, it does not degrade when subjected to UV light, inherent in all projectors. Unlike competing technologies, showing severe image quality degradation after only a few thousand hours, DLP technology remains constant over hundreds of thousands of hours.

VIDI™ technology improves image quality. VIDI technology from Philips greatly aids in reducing visible image artefacts, such as banding and break ups commonly found in competing projectors, and increases usability over time. By digitally controlling the projector light and colour output, great improvements in colour handling and stability over time are made possible. VIDI technology increases image richness, and accuracy.

RealColor realises seamless matching

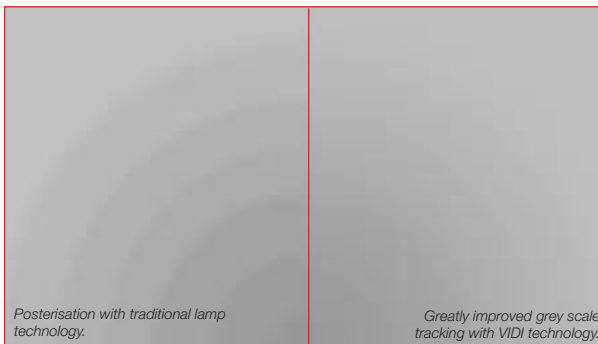


Each F22 projector is uniquely characterised and calibrated during the last stages of its manufacture. Unique optical performance values are recorded and matched to the electronics processing in order to secure perfect on-site calibration. With RealColor, it is possible to match any number of projectors, and ensure they all project the same primaries and grey scale, without going through a very complicated process. RealColor also ensures a consistent image over time, for instance in applications that rely on multiple images, where they need to look identical. With RealColor's unique matching and calibration possibilities, where each colour's coordinates and gain is set individually, it is possible to perfectly match projectors in a matter of minutes instead of hours or days.

Multiple colour wheel options



The F22 series has a range of colour wheel options to choose from; from visualisation and simulation specific, to generic graphics and high brightness optimised. Common to all are a very high degree of accuracy in colour and picture reproduction. Specific is that the VS colour wheel gives a broader colour gamut, and uses only RGB primary colours, whereas the G and HB colour wheels introduce secondary Cyan, Magenta, and Yellow colours for a higher output, and more punchy images.



Posterisation with traditional lamp technology.

Greatly improved grey scale tracking with VIDI technology.

**30-bit colour resolution**

The F22 features full 10-bit per colour signal processing and resolution on all digital and analogue inputs, and displays smoothly rendered transitions and gradients. Unlike traditional 8-bit displays, where the image often is stepped or graded, the F22 displays an image with less artefacts, and more accurately.

**Precision optics**

The F22 series optics has had its optics completely redesigned from the predecessor, the F20. With higher resolution, lower dispersion and chromatic aberration, improved contrast, and greatly improved image quality, the new lenses far surpass that of standard plastic lenses used by competing products. Designed entirely with high quality low dispersion and apochromatic elements, four projection lenses are available; both a standard and long throw zoom, a wide angle, and an ultra-wide angle lens with optical pincushion adjustment, designed for rear projection applications. Both wide angle lenses feature as low as <math><0.5</math> pixels optical distortion.

**24/7 operation warranty**

All our professional projectors are offered with a limited 24/7 operation warranty. Applicable to process control rooms and heavy duty applications where reliability is key, this is where projectiondesign makes a difference.

**Easy maintenance and lamp replacement**

Replacing the lamp is done directly from the front of the projector, and unlike most competitors, the F22 does not need to be unmounted when replacing it. The front panel comes off, so mechanical and optical adjustments are left intact. This is particularly important in installations where accuracy in installation is key.

**Small size and light weight**

The F22 has been designed to be as small and light as possible. With low unprung weight, it fits into motion platform simulators without having to take special notice of mounting hardware to cope with high forces during operation. Its light component weight ensures there is little stress internally, and this further enhances the F22's mode of operation.





Image courtesy of Umevatoriet and Antycip Simulation.

#### Built-in Real Time Clock and timer

The built-in real time clock and timer enables the F20 sx+ to be programmed to perform any desired operation at any one time. Examples include automatic switching on and off or switching between various sources at set intervals. Up to 10 different programmes can be stored individually.

#### Security and network manageable

Fully networkable, most projector settings and features can be set through the built-in web page, thus allowing remote asset management. Like with the IP interface, the projector itself features a PIN (Personal Identification Number) lock, so that unauthorised users cannot take advantage of it, thus preventing theft.

#### ProNet Asset Management

projectiondesign's own asset management and calibration software, ProNet, is compatible with all F22 series projectors. It can manage everything from simple management of single projectors, to multiple projectors across multiple sites. Additionally, the ProNet.Calibrator functionality enables seamless matching, calibration, and setup across any number of channels, and works as a full semi-automatic calibration package.

#### Programmable On/Off

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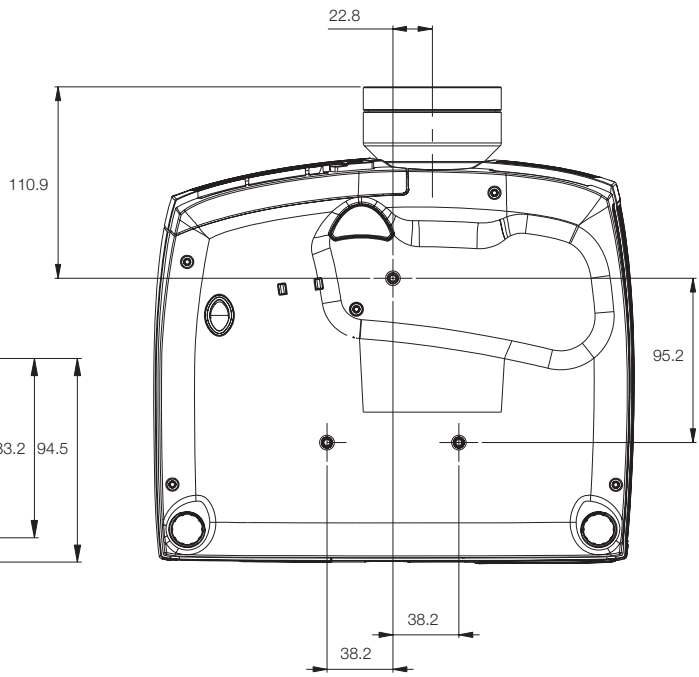
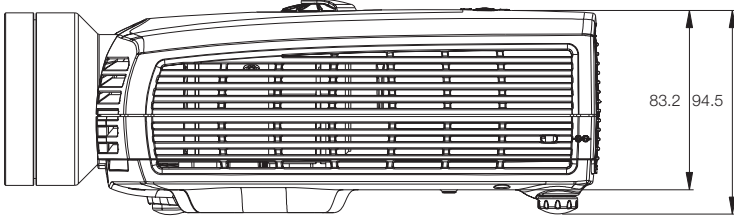
Technical specifications

<b>projector</b>		DLPE® digital projector		
<b>display</b>	technology	single chip DMD™ (Digital Micromirror Device™)		
	concept	all-glass optical design with lens shift		
	available resolutions	1920x1200	1920x1080	1400x1050
	brightness (max)	High Brightness	3000	3000
		Graphics	2300	2300
		VizSim	1400	1400
	contrast ratio	up to 2500 : 1 (on/off)		
	colours	30-bit		
	minimum colour space	REC709 with VizSim colour wheel		
	colour management accuracy	± 0.002 on x, y, z axis with VizSim colour wheel		
	image processing latency	~ 22 ms on graphics port		
<b>input signal compatibility</b>	computer	up to 1920 x 1200 pixels		
		RGBHV, RGBS, RGsB		
	horizontal scan frequency	15 - 150 kHz		
	vertical scan frequency	48 - 190 Hz		
	video	HDTV (1080i, 720p, 576/p, 480i/p) NTSC 3.58/4.43, PAL BGHI, M, N, SECAM		
	bandwidth	205 MHz analog RGB		
		165 MHz digital RGB (DM or HDMI)		
<b>optics</b>	available lenses	fixed focal ultra wide angle with focus lock/barrel adjustment		
		fixed focal wide angle		
		standard zoom		
		short tele zoom		
	focusing distance	0.5 - 40m (see separate lens specifications)		
	optical lens shift	vertical		
	colour wheel options	RGBRGB – visualization & simulation RGBCMY – graphics display RGBCYW – high brightness display		
	lamp	220W VIDI™ UHP™		
	lamp life	2250 hrs in full power, 3000 hrs in eco mode		
	replacement lamp part no.	400-0402-00		

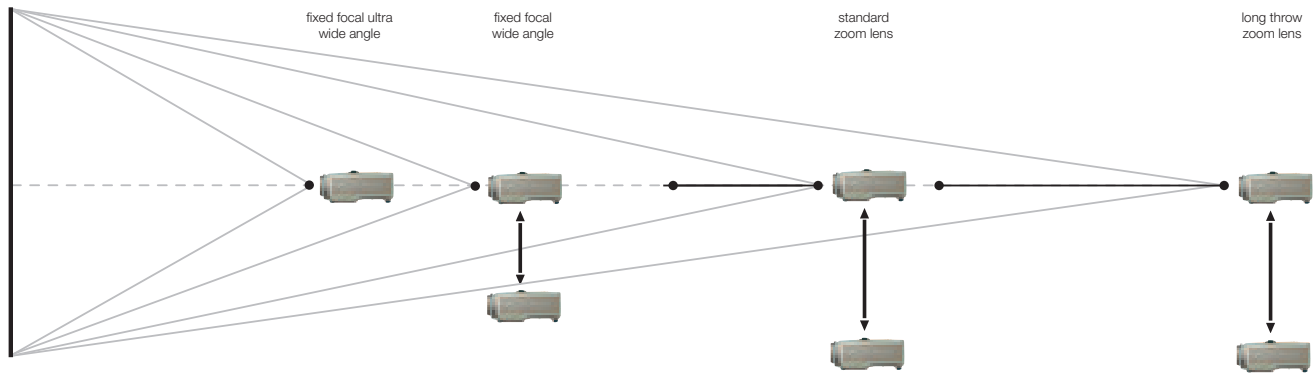
<b>connectivity</b>	computer	1x HDMI (1.3)
		1x DV-D
		1x 15-pin DSUB
	video	1x HDMI (v1.3) (HDCP)
		1x DV-D (HDCP)
		1x RCA x3 YUV
		1x 4-pin mini DIN Y/C
		1x RCA composite video
	control and communication	1x RJ45 TCP/IP network port
		1x RS232 9-pin DSUB
		1x USB – mouse control & firmware upgrade
		2x 12V (60mA) triggers (screen drop / aspect)
		1x RC repeater, 3.5mm mini jack
<b>supplied accessories</b>	cables	4m power cord (country dependant)
	other	backlit IR remote control, ceiling mount cable cover product documentation
<b>general</b>	dimensions (dwh)	234 x 278 x 94 mm (ex lens)
	weight	about 3.0 kg (depending on lens)
	environmental	RoHS, WEEE
	security	4-digit PIN code, Kensington lock
	power requirements	100 – 240 VAC, 50/60 Hz, +/- 10%
		<290W power consumption
	BTU/hr	<980
	conformances	CE, CSA "C/US", FCC Class A, CCC
	operating temperature	0 – 40°C / 32 – 104°F; 0 – 1500 m
		0 – 35°C / 32 – 95°F, 1500 – 3000 m
	operating and storage	20 – 90% RH
	available colours	black metallic, pearl white
	warranties	2 years, 24/7, 500 hours or 90 days on lamp Up to 5 years total extended warranty available. Conditions apply.



Standardised bolt-on ceiling mount interface

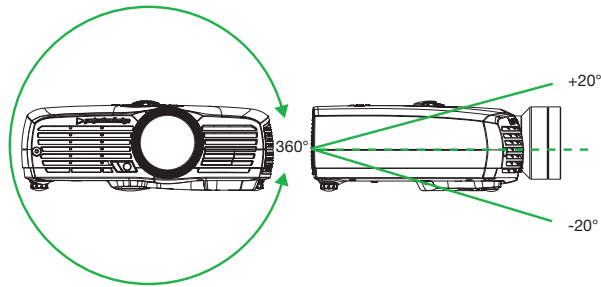


Lens options and lens shift



Four lens options gives great installation flexibility. The ultra wide angle lens options is on axis, the wide angle features a 0-80% lens shift, and the zoom lenses feature +10 - +110% offset.

Rotation



Throw ratios

	wuxga	1080p	sxga+	720p
ultra wide angle	0.74 : 1	0.74 : 1	0.80 : 1	0.87 : 1
wide angle	0.92 : 1	0.92 : 1	1.00 : 1	1.10 : 1
standard zoom	1.60 - 2.21 : 1	1.60 - 2.21 : 1	1.73 - 2.39 : 1	1.95 - 2.43 : 1
long throw zoom	2.70 - 4.20 : 1	2.70 - 4.20 : 1	2.50 - 3.90 : 1	3.00 - 4.65 : 1
± 5% accuracy				

The F22 can be rotated 360 degrees around the lens axis, and for instance project in a portrait mode, as well as +20/-20 degrees around the side-to-side axis.

Available versions

Model	Colour Wheel	Ultra Wide Angle Lens	Wide Angle Lens	Standard Zoom Lens	Long Throw Zoom Lens
F22 wuxga	High Brightness	101-1342-xx	101-1339-xx	101-1336-xx	101-1345-xx
	Graphics	101-1341-xx	101-1338-xx	101-1335-xx	101-1344-xx
	VizSim	101-1340-xx	101-1337-xx	101-1334-xx	101-1343-xx
F22 1080	High Brightness	101-1360-xx	101-1357-xx	101-1354-xx	101-1363-xx
	Graphics	101-1359-xx	101-1356-xx	101-1353-xx	101-1362-xx
	VizSim	101-1358-xx	101-1355-xx	101-1352-xx	101-1361-xx
F22 sx+	High Brightness	101-1278-xx	101-1275-xx	101-1272-xx	101-1281-xx
	Graphics	101-1277-xx	101-1274-xx	101-1271-xx	101-1280-xx
	VizSim	101-1276-xx	101-1273-xx	101-1270-xx	101-1279-xx
F22 720	High Brightness	-	-	-	-
	Graphics	-	-	-	-
	VizSim	101-1312-xx	101-1310-xx	101-1308-xx	101-1314-xx

Available colours: -08 Black Metallic (standard), -05 Pearl White (option).  
See separate documentation for 3D stereoscopes model and DICOM compliant Medical series.  
Other variants and customisations on request.

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