

▶ *projectiondesign*®

▶ *projectiondesign* **F7+**

SXGA+ (1 400 x1 050)
High Resolution

DLP™ Technology
Single Chip

2 500 ANSI lumen
High Brightness

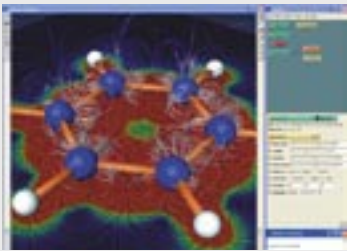
28 dB(A)
Low Noise

Awarded
Magnesium Design

3.4 kg / 7.5 lbs
Compact Low Weight™

F1+ high resolution DLP™ projector

The F1+ projector has been developed specifically for graphically challenging high resolution display purposes. A bright, high resolution 1400 x 1050 pixel image provides the most versatile of all DLP™ projectors available. Medical imaging, visualization, simulation and public displays are amongst the main applications for which it is suited. Advanced optical solutions, powerful signal and video processing, and a fully integrated design philosophy create a projector with an extremely powerful combination of size, image quality and flexibility. The projectiondesign F1+ defines state-of-the-art projection.



1400 x 1050 SXGA+ resolution

1400 x 1050 pixel resolution provides the most detailed display of any DLP™ projector available. Ideal for visualization, simulation and medical imaging, the F1+ easily resolves the finer detail of specialty graphics, such as XRay and medical imaging, CAD/CAM and design,

and for instance oil and gas reservoir 3D modelling and visualisation. In addition, it provides a very high visual resolution display for immersive simulation. Compared to lower resolutions, such as SVGA or XGA, the SX+ resolution provides more than

306% and 186% pixels respectively. With additional support for 1600x1200

pixels and even higher resolutions - as well as very high perceived resolution of DLP™, the F1+ becomes near "resolutionless", and as close to a continuous analogue image as possible.

Single Chip DLP™ technology

Single chip DLP™ technology ensures perfect colour uniformity across the image, as it is created by a single display. Instead of combining three displays like in LCD and LCoS projectors - subject to change and become non-uniform, DLP™ projectors will always stay consistent. For the same reason, there are also no convergence errors that will discolour and smear detail of images. Most importantly,

using a single chip DLP™ display ensures long life operation, even in heavy duty applications. Where other technologies change properties over time, and image quality changes dramatically, DLP™ remains consistent over hundreds of thousands of hours. In fact, so long that we guarantee the core DLP™ technology to work for at least 100.000 hours, more than 20 times competing technologies.

High Brightness

The bright, 2500 ANSI lumens available is perfect for most graphical displays, and enables great dynamic images with any screen size in both front and rear projection applications. The F1+'s flexible adjustability and options for tailoring its' high brightness to any screen type or size, is unique to this projector.

High Contrast images

The F1+ uses DLP™ technology with DarkChip2™ contrast enhancing technology. This results in extremely high contrast – up to 2500:1 full on/full off – more than



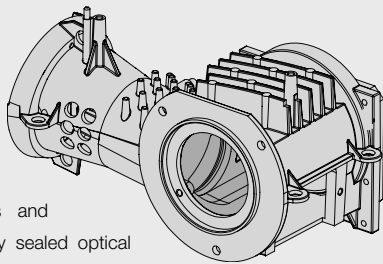
double that of projectors based on competing technologies, such as LCD and LCoS. The high contrast projects highly dynamic images, perfect for instance for discerning subtle detail in high resolution medical imaging, such as XRay images. High contrast also means a very deep black level, so that motion video and graphics really are outstanding.

*Actual installation, Information billboards,
Manchester Airport*



SOA – Sealed Optical Architecture

To ensure faultless and trouble-free operation in unforgiving and harsh environments, such as bars and clubs, the F1+ features a fully sealed optical architecture. Dust, smoke and other tiny particles are prevented from entering and contaminating the delicate light engine, thus will not alter the displayed image or quality over time. In addition, it ensures the projector requires almost no servicing and maintenance.



Designed for 24/7 continuous use

The F1+ has been designed to withstand 24/7 continuous use, in applications such as control rooms and public displays. With DLP™ technology, long life mechanical elements such as magnesium and ceramics, as well as over-specified fans and colour wheel engine, the F1+ only requires very low frequency maintenance to meet the criteria for continuous use.

Multiple available product configurations

The F1+ is available with a range of different colour wheels, each suited to different applications. The options tailor the F1+ to specific properties, for instance photographic colour reproduction, high brightness, video performance, improved contrast, etc. And, for the most extreme conditions of all, the F1+ is available with no colour wheel at all – to create a fully monochromatic image. This is perfect for applications where colour is not used, and a high contrast black and white image is desired, for instance in some medical and engineering applications.

Custom Optimization controls for multiple screen configurations

The F1+ builds on and extends the Digital Dynamic Concept integrated in our home theatre projectors. With continuously adjustable lamp power (200 – 250W), white boost and clear segment control, as well as per-source customizable colour balance and gain/offset, DDC provides an easy to use and simple way of matching a number of projectors clustered together, for single display use.





Actual installation, VTI Driving Simulator III
 Courtesy of AA Video.



Comprehensive connectivity

The F1+ connectivity allows simple connection to nearly any available source, from digital and analogue RGB (DVI and VGA), through various video interfaces, sound, USB and RS232 in/out, as well as network and a monitor redrive.

Low image processing latency

Ideal for simulation applications and critical displays where delay of input image to output image plays a deciding role, the F1+ features image processing latency as low as one frame for graphics inputs through the DVI and VGA ports. The output image is displayed on the screen immediately upon completion of writing to the frame memory, thus provides a latency of only ~17ms with a 60Hz input signal. The F1+ runs frame synchronized on any input signal from 48 – 62 Hz

Multiple Projector Control Options

The F1+ can be controlled through both a TCP/IP network protocol, via RS232, or from a comprehensive remote with multiple discrete commands. Using RS232, up to 128 devices can be connected in series, and commands can be broadcast from a single UART. The remote features discrete commands such as source select, brightness, contrast, colour, volume, in addition to menu control, AV mute and freeze image commands.

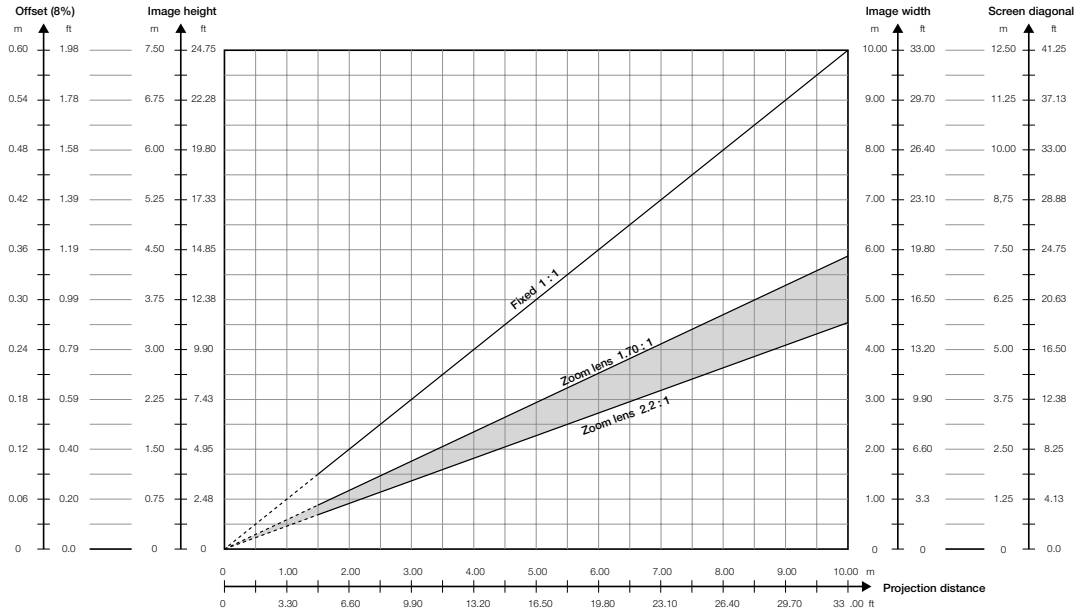
wide angle lens standard lens

Zoom and Wide Angle Lens options

The F1+ is delivered with a standard throw zoom lens, covering most application needs, or with an optional ultra wide angle lens, at 1:1 throw ratio. Both lenses are designed with performance in mind, with high brightness and contrast, and very low optical distortion. Unlike any competing lens, the wide angle optics feature a fully off-set image, making it possible to mount the F1+ flat on a ceiling, but with a very short throw ratio. The high speed of the wide angle lens – F/2.8 – is the same as for the standard zoom, so full brightness is retained at any one time.



Image sizes and distances



Highly predictable cost of ownership

The F1+ ensures a low cost of ownership in many ways. The 4000 hour economy lamp mode, extremely low daily maintenance requirements, and the choice of using long life DLP™ technology all result in a projector that is very cost effective in heavy usage situations.

Network connectivity

Simple and easy asset management, as well as precise control is available through the built-in network connectivity. The internal web page provides easy access to setting up projector network properties, and the network interface provides an

easy-to-use interface to controlling all projector properties, specially designed for multiple projector installations. Important status parameters, such as power- and lamp mode, accumulated lamp hours, active source and others are readily available.



Extreme Size/Weight/Form factor combination

The extreme form factor of the F1+ is not matched by any other projector. While small and unobtrusive in single unit installations, the lightweight and sturdy chassis enables it to withstand mounting and use in very demanding installation environments, such as motion simulators and at-sea applications where the construction provides a stable imaging platform at any time.

Actual installation, Navigation Bridge Simulator,
Courtesy of TRANSAS

Technical specifications

F1+ SX+

Projector		101-0050-08 SXGA+ DLP™ digital projector 101-0051-08 SXGA+ wide DLP™ digital projector
Display	Technology Concept Resolution Brightness Contrast Ratio Aspect Ratio Colours Image Processing Latency	LVDS DMD™ with DarkChip2™ Sealed all-glass, prism less optical design 1 400 x 1 050 pixels 2 500 ANSI lumens (typ) 2 500 : 1 (max on/off) 4 : 3, 5 : 4 and 16 : 9 compatible 24-bit colour resolution ~ 1 input frame on graphics port
Compatibility	Computer Compatibility Horizontal Scan Vertical Scan Video Compatibility Bandwidth	UXGA, SXGA+, SXGA, XGA, SVGA, VGA 1920 x 1080 - 640 x 480 pixel resolution RGBHV, RGBS, RGB 15 - 150 kHz 48 - 190 Hz HDTV (1080i, 720p, 576i/p, 480i/p) NTSC, NTSC4.43, PAL, PAL-M, PAL-N, SECAM 205 MHz on analog RGB 165 MHz on digital RGB over DVI
Optics	Standard Lens Throw Ratio (distance : width) Image size (diagonal) Focusing Distance Lens Offset (of image height) Zoom Ratio Wide Angle Lens Throw Ratio (distance : width) Image size (diagonal) Focusing Distance Lens Offset (of image height) Lamp Lamp Life (typ)	f = 33 - 42 mm, F/2.75 - 3.1 1.75 - 2.2 : 1 0.9 - 7.3 meter (3 - 24 ft) 1.5 - 10 meters (5 - 33 ft) 8% 1.25x f = 19 mm, F/2.8 1 : 1 throw ratio 2 - 13 meters (6 - 43 ft) 1.5 - 10m 8% 250W UHP™ 4 000 hours (eco mode), 2000 hours full power mode
Inputs / Outputs	Computer Inputs Video Inputs Audio Inputs Control and Communication Computer Output Audio Output	2x 15 pin HDDSUB (analog RGB) 1x DVI-D (digital RGB) 3x RCA (component YUV) 1x 4-pin Mini DIN (S-video Y/C) 1x RCA (composite video) 2x 3.5 mm stereo mini jack (data / video) 2x RS232 9-pin DSUB (control) in/out 1x RJ45 TCP/IP network port 1x USB (mouse control and firmware upgrade) 1x 3.5mm mini jack RC repeater 1x 15 pin HDDSUB (analog RGB) 1x 3.5 mm stereo mini jack, variable line level
Supplied Accessories	Cables Other	2 m DVI-D cable 2 m VGA cable, 15pin HDDSUB 2 m USB cable 2 m A/V cable, 3x RCA - 1x RCA + 3.5 mm Mini Jack Stereo Audio cable 3.5mm Mini Jack - 3.5 mm Mini Jack Ceiling Mount Cable Cover Standard IR remote control
General	Operating noise level (typ) Dimensions (dwh) Weight Power Requirements Conformances Operating Temperature Operating Humidity Storage conditions Colour Warranties	28 dB (A) at 20C/ 68F, sea level 244 x 278 x 88 mm (9.6 x 10.9 x 3.5 inches) 3.4 kg / 7.5 lbs 100 - 240 VAC, 50/60 Hz, +/- 10% 350 W power consumption CE, CSA "C/US", FCC Class A 0 - 40C / 32 - 104F, 0 - 1500 m 0 - 35C / 32 - 95F, 1500 - 3000 m 20 - 90% RH 20 - 90% RH Gun metal grey metallic 2 years, 500 hours or 90 days on lamp!



601-0052-00

All brands and trade names are the property of their respective owners. Specifications subject to change without prior notice. All values are typical and may vary. Patent pending on lamp and cooling system.