projectiondesign®
HIGH PERFORMANCE PROJECTORS

p r e l i m i n a r y

professional projector series

F85 series

WUXGA,1080p or SXGA+ resolution

3-chip DLP® technology

up to 10700 ANSI lumens

Advanced Color Optical Processing

projectiondesign

DLP
TEXAS INSTRUMENTS

ProNet 2.0™

▶ projectiondesign ®
HIGH PERFORMANCE PROJECTORS

professional projector series

The projectiondesign professional series of projectors include high resolution, high performance products designed and made specifically for graphically challenging appllications such as scientific visualisation, training and simulation, media and entertainment in public displays, and other similar applications.

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

F85 series

The projectiondesign F85 series of three-chip DLP® projectors is our top professional model, and is made for large screen imaging and the ultimate image quality for demanding users.

Markets and applications

With its brightness and numerous configuration, performance and warranty options, the F85 series is made for users with extra high requirements and expectations. It fills large screens in auditoriums, on stages or other applications that require high brightness and the ultimate in image quality and reliability.

Key features

• RealColor™ colour management provides completely unique colour management accuracy
• Full 24/7 warranty covers nearly any operating environment and installation requirement
• DynamicBlack™ gives totally unique dynamic range for a three-chip projector
• ACOP optical colour processing enables user selectable color management without loss of bit depth
• 3-chip DLP® technology provides outstanding colours and dynamics
• Comprehensive lens range designed for high resolution
• Choice of WUXGA,1080p or SXGA+ resolution options

WUXGA, 1080p or SXGA+ resolution

The projectiondesign F85 can be configured with either WUXGA, 1080p or SXGA+ resolution for computer or video centric applications. In large auditoriums and with large screens, where computer imaging with maximum level of detail is a primary requirement, 1920x1200 pixels (WUXGA) is the obvious choice and fully compatible with the legacy 1600x1200 format. Furthermore, for video centric applications, the 1920x1080 (Full HD 1080p) pixel resolution perfectly fits high defintion video and data. For editing and video centric applications where a menu line, or additional information is needed on screen simultaneously with the unaltered 1080p video image, WUXGA resolution gives just that. FInally, SXGA+ resolution at 1400 x 1050 pixels is perfect for multi tiled projection applications in domes or with curved screens, with minimum amount of overlap and wasted pixels.

3-chip DLP®

3-chip DLP technology is renowned for producing formidable on-screen images, as it uses three DMD® (Digital Micromirrod Device) imagers for strongly saturated and accurate colours. With lots of brightness from the 3-chip engine's high efficiency, and many options for adjusting colour and brightness performance, the F85 series can be tailored to suit a a vast number of applications, focusing on large screen video centric displays and events.

DLP technology – chosen for reliability

The DLP technology from Texas Instruments® is chosen for its unmatched reliability, and its unique coupling with long lasting image quality. With a widely recognised and proven reliability record and high brightness and contrast, all whilst displaying utterly natural colours, it is the obvious choice for heavy duty applications that run continuously, or are mission critical. Independent testing has proven DLP technology to be the most reliable of all microdisplays; not degrading 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.

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California Academy of Sciences, California, USA.

The California Academy of Sciences in San Fransisco, USA, uses more than 30 projectiondesign projectors in various configurations

A wide range of lenses, from ultra wide 0.74 : 1 to 6.24 : 1 gives unique flexibility in installations and placement of product

Precision projection lenses

The F85 series features a wide range of custom designed, precision projection lenses for the best image quality, and the most reliable setups. Key features include infinitely adjustable IRIS and aperture settings, and motorized zoom, focus and lens shift with profile memories for use in multiple settings and installations with programmed calibration and screen configurations. Most importantly, every single lens uses Low Dispersion (LD) glass and aspherical lens elements for high quality focusing and sharpness, as well as high optical interfield contrast, resulting in very high image quality. Unlike many competing projector ranges, the lenses are designed and made with high resolution in mind, not taking standard, off the shelf lenses for use in higher performance applications. The range of lenses span from an an ultra wide angle 0.74 : 1, to a long tele zoom at 6.24 : 1, and comprises five options.

Advanced Color Optical Processing

The F85 series projectors feature new and revolutionary projectiondesign

revolutionary
colour
performance

optical color processing technology. By combining fixed and motorised optical filters for each colour channel, red, green, and blue, the projector can be optically calibrated with near infinite accuracy. It also means that by the flick of a switch, you can change the projected colour gamut from standard computer graphics optimised, to comply with for instance REC709 (High Definition programming) All this without any loss of bit depth, as the compensation is purely optical, and not electronic. Unlike competing projectors, where colour calibration is based upon a simple yellow notch filter to change the green point of the picture, or simply by changing electronic values, ACOP gives vastly superior performance on all important levels.
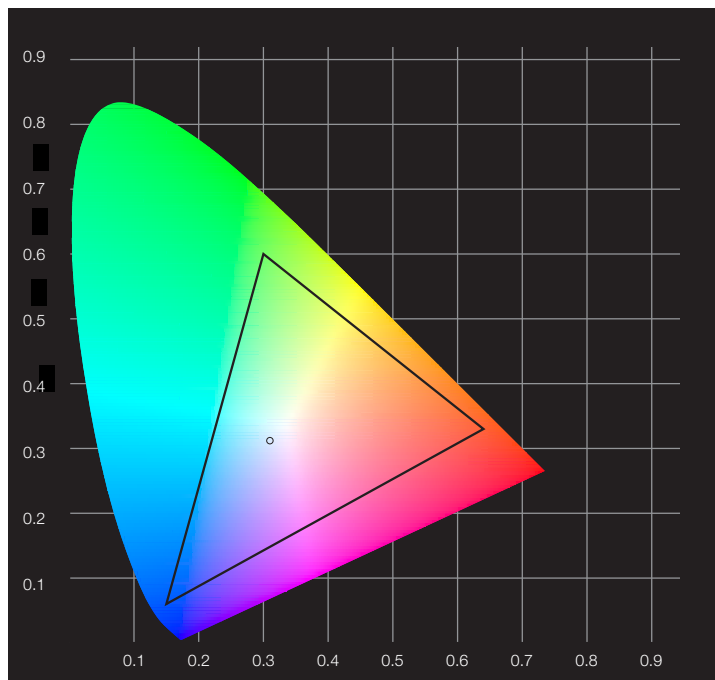
RealColor™ colour calibration

Each F85 projector is uniquely characterised and calibrated during manufacture. Unique optical performance values are recorded and matched to the electronic image processing 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. Using our ProNet 2.0 software automates this process.

What RealColor gives

RealColor provides a unique and quick way to calibrate and set up perfect images for any number of projectors. RealColor can alter imagery by changing simple characteristics such as the colour temperature of the image – perfectly along the black body curve, or very complex details such as each colour's relative saturation and x,y coordiantes. RealColor works by mathematically calculating each colour independently, in fact, it is perfect to within 0.002 along all axes of measurement.

DynamicBlack™ for outstanding dynamics

The F85 series features unmatched imaging dynamics amongst large venue projectors. The unique DynamicBlack functionality automatically adapts to the input histogram of the image, and adjusts so that image output contrast is maximised at any one point in time. This creates much more dynamic imaging, and a more involving experience. If DynamicBlack functionality is not desired, the user can manually adjust IRIS and settings to match a constant, desired output level, with contrast up to 15 000 : 1, and brightness levels to match that of the desired screen size requirement.
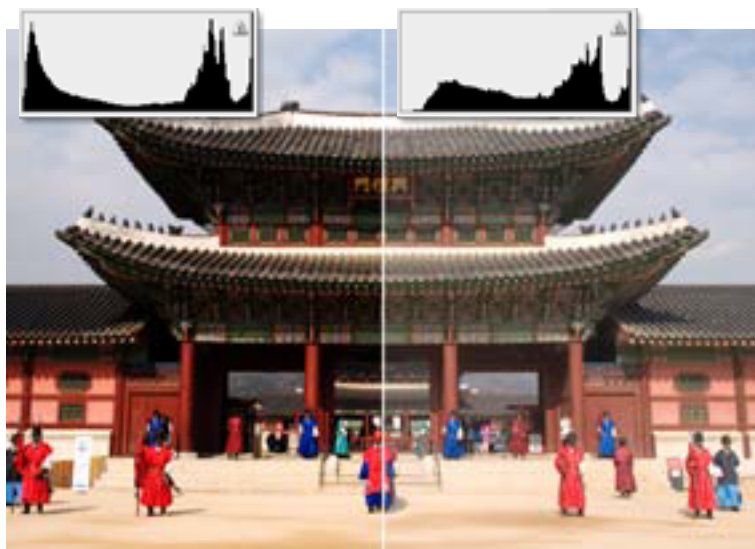
DynamicBlack automatically adjusts output to the input signal, and maximises available contrast in the image. The result is unmatched dynamic performance

Colour matching

Like all other projectiondesign professional projectors, the F85 series features numerous possibilities and alternatives for matching of several projectors, so that they all appear and perform similarly. Actual colour matching is realised through several process steps, including that of hand selecting units that are optically similar. Additionally, colour matching is realised using extensive features of the RealColor colour management suite, so that every single projector performs absolutely similarly. ProNet 2.0 calibration software suite automates this process.

applications and features

Low Total Cost of Ownership

Thanks to its complex and robust build and construction, the F85 series requires very little maintenance and in-life maintenance. There are no user serviceable parts, and it does not have any filters or other parts that need periodical replacement. That means it does not require a costly and high frequency maintenance contract. At the same time, and compared to similarly performing xenon high power lamps, lamp replacement cost is low*, and typical lamp life is long. In total, a very cost effective projector over time, resulting in low and predictable, cost of ownership.

*   When replacing lamps, it is advised to use only original parts and accessories, as non original aftermarket lamps may reduce performance, damage the projector, and void warranties.

Low Frequency Maintenace programme

Our Low Frequency Maintenance programme can be set to automatically notify of required services and maintenace. When run continuously, moving parts such as fans and colour wheels require periodic replacement in order to secure and enable heavy duty and uninterrupted operation. With the F85, the shortest duty cycle of any one component – run in full power mode, is as long as 8000 hours, meaning a full year's operation in 24/7 without maintenance. Add to that hot swappable lamps, and you have a projector that simply does not need to be turned off, running either in automatic lamp relay mode, or even with two lamps at any power setting around the clock.
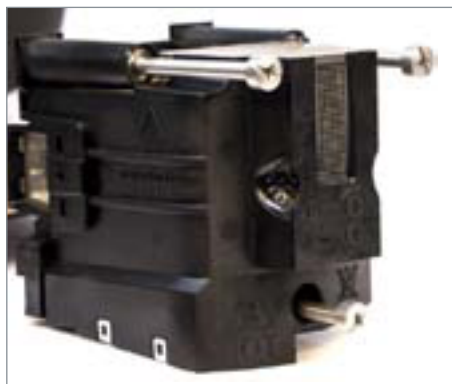
Original lamp with projectiondesign optimised fixture mechanics

Designed for full 24/7 operation

All projectiondesign professional projectors feature full 24/7 operation warranties. That means they are designed to operate continuously. There is no fine print. Designing for 24/7 operation requires a lot of attention to detail. Some technologies are better than others when it comes to withstand the abuse of time. We use only components that have predictable behaviours, for instance fans, colour wheel motors, and electronic components that are designed by their respective manufacturers to do the same - withstand time. There are no off-the-shelf components. That is why we also closely monitor the creation of every detail, apply dedicated thermal management, and use specific materials in all parts of the process.

Changing lamps is easily done from the side of the projector

projectiondesign in-house EMC lab

In-house acoustics lab

RoHS compliant PCB assembly line

immaculate process management

Every single F85 projector is rigorously tested, and characterised in-house. We keep test records and performance statistics for every single unit. Also, as we put our pride into making great projectors, they are not passed down an automated production line, but enjoy the careful management of people at all stages of their manufacture. That also means we are personally responsible for all of them. In addition, every single projector is made to specific order. The configuration ordered is the configuration built, and only existing in that particular installation.
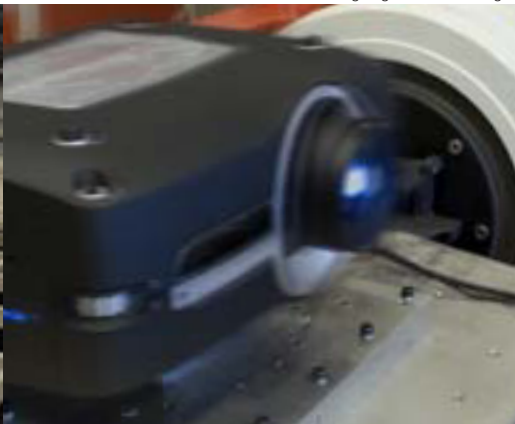
In house development and process management

Every single part of the F85 series projectors is developed, rigorously tested, and verified in-house at projectiondesign. With more than 800 models and variations of projectors in regular manufacture, test, research and verification facilities include everything from acoustical analysis labs, to a full featured FCC certified EMC lab, environmental labs for lifetime and operational testing, such as temperature variations and testing of vibration resistance, as well as our own optics lab and various test and demo facilities.

projectiondesign warehouse is completely automatic

*F85 series undergoing vibration testing*

www.projectiondesign.com

Extensive input compatibility

Two discrete digital inputs, HDMI and DVI-D enables simple and source switching setups in smaller installations. Both inputs feature HDCP - High bandwidth Digital Content Protection. The F85 also features legacy formats such as RGBHV over VGA, and a 5-BNC input, in addtion to standard video formats. Importantly, the F85 features a projectiondesign unique interface, XPort™, for connection to third party modules, as well as standard modules provided by projectiondesign. An HD-SDI module is available from projectiondesign.

ProNet 2.0 asset management and calibration

Adding to the serviceability and in-life monitoring features, projectiondesign ProNet 2.0 asset management suite can be set up to monitor and report on an unlimted number of projectors in a dedicated or corporate network, in a single site, or in multiple sites. ProNet 2.0 monitors every single aspect of the projector, from individual lamp and fan status, to operating hours, use statistics, and any other related information. ProNet 2.0 offers ProNet.calibrator which extends features to simplify and automate colour matching and projector calibration.
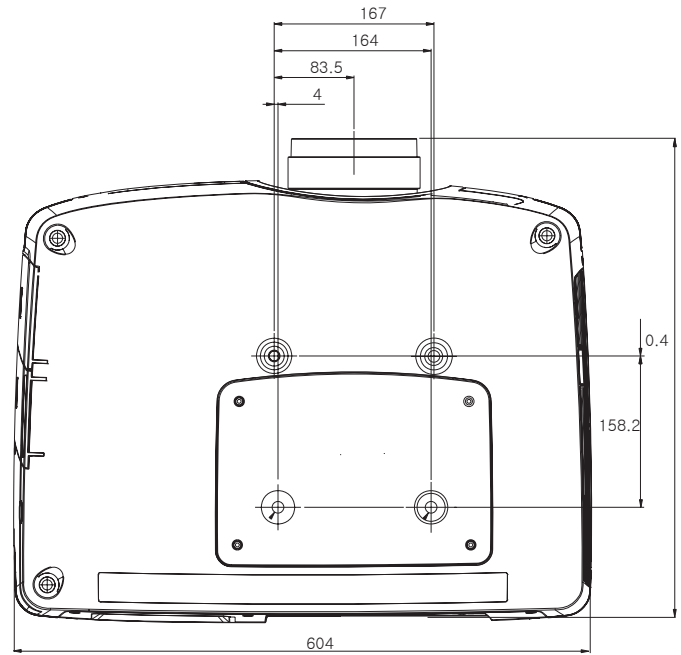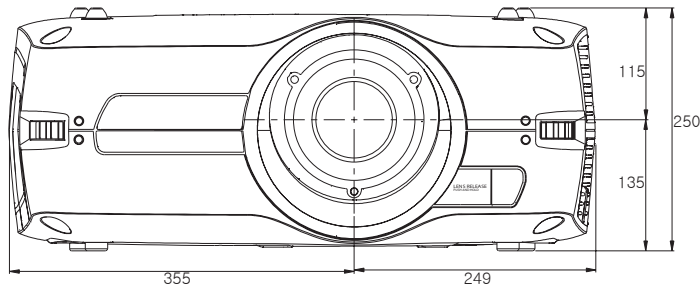
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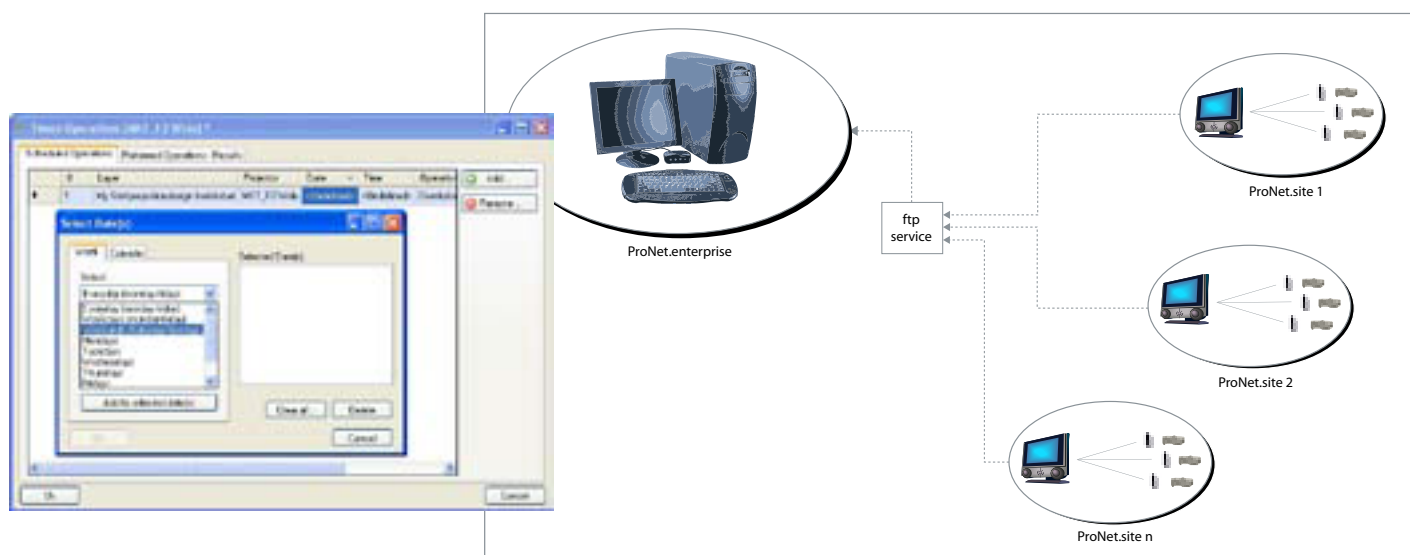
Technical specifications

projector			DLP® digital projector		
display	technology		3-chip DMD™ (Digital Micromirror Device™)		
	concept		sealed, all-glass optical design with lens shift		
	available resolutions		1920 x 1200	1920 x 1080	1400 x 1050
	brightness	centre lumens	10700	10700	10700
		REC709	7000	7000	7000
	contrast ratio		up to 15 000 : 1 (on/off) (automatically adaptive)		
	colours		30-bit		
	colour management accuracy		± 0.002 on x, y, z axes		
	image processing latency		~ 22 ms on graphics port		
input signal compatibility	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/p, 720p, 576i/p, 480i/p)		
			NTSC 3.56/4.43, PAL BGHI, M, N, SECAM		
	bandwidth		205 MHz analog RGB		
			165 MHz digital RGB (DVI or HDMI)		
optics	available lenses		fixed focal ultra wide angle	EN22 (503-0172-00)	
			fixed focal wide angle	EN23 (503-0173-00)	
			standard zoom	EN21 (503-0136-00)	
			short tele zoom	EN24 (503-0174-00)	
			short tele zoom	EN26 (503-0176-00)	
	focusing distance		0.7 - 20m		
	optical lens shift		vertical and horizontal		
			EN22 on axis only		
	lens iris control		F/2.1 – 6.5 for all lenses, continuously adjustable		
	DynamicBlack™		user adjustable		
	shutter		mechanical		
	ACOP colour filters		standard RGB		
			motorised REC 709		
	lamp		2 x 450W UHP™		
	lamp life		2000 hrs (max typical) (5000 hrs in eco relay mode)		
	replacement lamp part no.		400-0700-00		

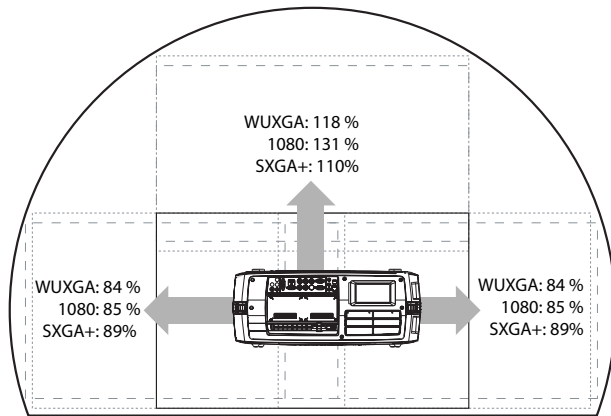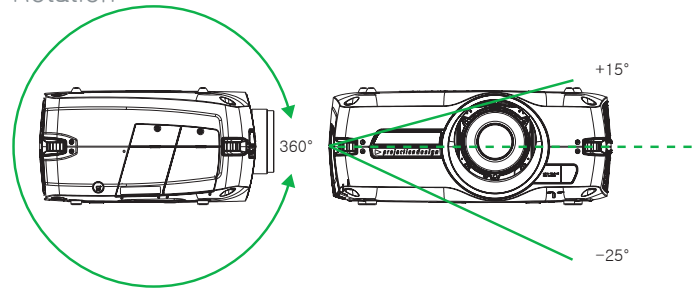| connectivity	computer	1x HDMI (1.3)
		1x DVI-D
		1x 15-pin DSUB
		1x BNC x5
	video	1x HDMI (v1.3) (HDCP)
		1x DVI-D (HDCP)
		1x RCA x3 YUV
		1x 4-pin mini DIN Y/C
		1x RCA composite video
	control and communication	1x RJ45 TCP/IP network port
		2x RS232 9-pin DSUB (in / out)
		1x USB – mouse control & firmware upgrade
		2x 12V (60mA) triggers (screen drop / aspect)
		1x RC repeater, 3.5mm mini jack
	other	2x configurable XPort™ (front- / back end)
supplied accessories	cables	4m power cord (country dependant)
	other	backlit IR remote control
		product documentation
general	dimensions (dwh)	505 x 604 x 250 mm (ex. lens)
	weight	about 24 kg (net, ex. lens)
		about 38 kg (shipping)
	environmental	RoHS, WEEE
	security	4-digit PIN code, Kensington lock
	power requirements	12.5A or 6.5A, 100-120V or 200-240V, 50-60Hz
		<1050W power consumption
	BTU/hr	<2900
	conformances	CE, CSA cUL, FCC Class A, CCC
	operating temperature	10 – 40ºC / 32 – 104ºF, 0 – 1500 m
		0 – 35ºC / 32 – 95ºF, 1500 – 3000 m
	operating and storage	20 – 90% RH
	available colours	soft touch rubber black matte
	warranties	standard 2 years, full 24/7 operation
		500 hours or 90 days on lamp
		up to 5 years total extended warranty available.
		conditions apply.

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Standard bolt-on ceiling mount interface

167
164
83.5
4

115
250
135
355
249

0.4
158.2
604

Flexible vertical and horisontal lens shift

WUXGA: 118 %
1080: 131 %
SXGA+: 110%

WUXGA: 84 %
1080: 85 %
SXGA+: 89%
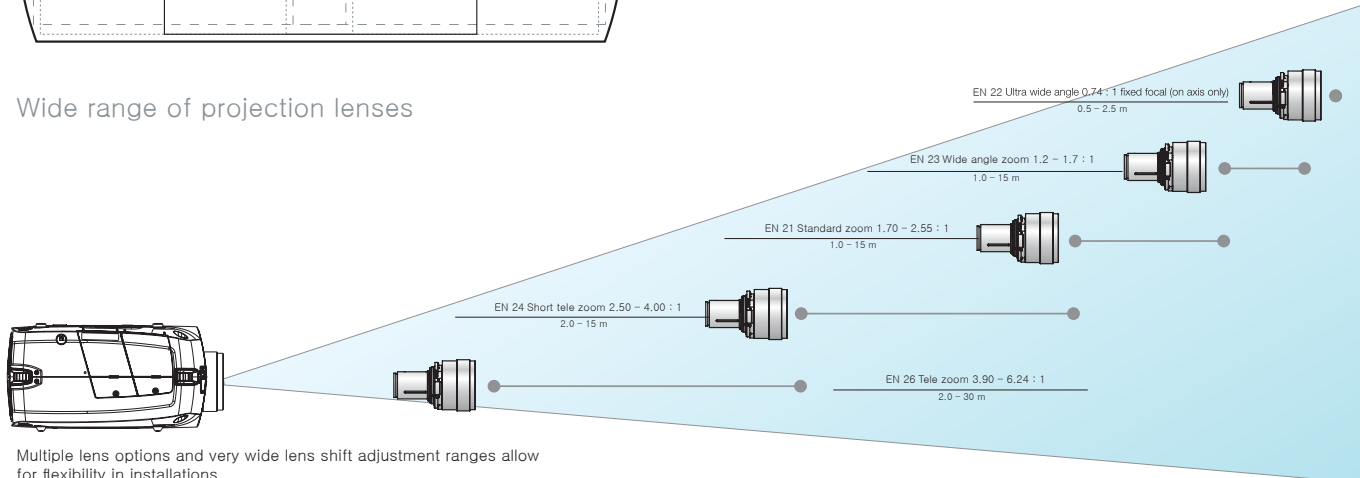
WUXGA: 84 %
1080: 85 %
SXGA+: 89%

Rotation

+15°
360°
−25°

The F85 can be rotated 360 degrees around the side to side axis, and for instance project straight down or up, as well as +25/−15 degrees side to side.

Wide range of projection lenses

EN 22 Ultra wide angle 0.74 : 1 fixed focal (on axis only)
0.5 – 2.5 m

EN 23 Wide angle zoom 1.2 – 1.7 : 1
1.0 – 15 m

EN 21 Standard zoom 1.70 – 2.55 : 1
1.0 – 15 m

EN 24 Short tele zoom 2.50 – 4.00 : 1
2.0 – 15 m

EN 26 Tele zoom 3.90 – 6.24 : 1
2.0 – 30 m

Multiple lens options and very wide lens shift adjustment ranges allow for flexibility in installations.

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