SONY®

Multiscan Projector

VPH-G90U/G90M

VPH-G90

Continuing to strive for excellence in projectors, Sony has developed the VPH-G90* Multiscan Projector offering uncompromising picture quality. The Flagship Model in Sony's extensive range of CRT projectors, the VPH-G90 combines extremely bright, precisely focused images with ease of operation and professional level of reliability.

Sony is a world leader in the advanced technologies that are necessary to achieve projected images of outstanding quality, as evidenced in the VPH-G90's high performance 9-inch electromagnetic CRTs and HACC lenses. Accepting a wide range signal frequencies of up to 135 MHz makes it possible to images from sources that include conventional video, HDTV and high frequency computer signals. In addition, the advanced circuitry of the VPH-G90, including the proprietary Sony Digital Reality Creation technology, delivers high quality of image reproduction.

In professional applications, especially in multiple projector 'virtual reality' and simulation applications, the numerous features engineered into the VPH-G90 really prove their worth.

In large venue applications, the outstanding picture performance of the VPH-G90 Multiscan Projector makes it the only possible choice.

*The VPH-G90 is available in two different models: the VPH-G90U for countries operating at 100-120 V and the VPH-G90M for 220-240 V AC.

FEATURES

SUPERB PICTURE QUALITY

High Resolution, High Brightness and High Contrast

The VPH-G90 uses advanced technologies to provide bright and high contrast images.

9-inch electromagnetic focus CRTs featuring ultra-fine phosphors, low capacity electronic guns and new magnet coils that allow a very small spot size, are the fundamental factors for precise images. Hybrid HACC lenses contribute to the projection of brighter and crisper images. Optical Coupling technology means that images are reproduced in high contrast.

Together with these mechanical technologies, Sony has also taken advantage of many new electronic developments. A 135 MHz-wide RGB bandwidth enables the VPH-G90 to handle high resolution computer signals. It also includes new high-voltage circuitry for brightness and a new video output circuit for both high resolution and high brightness.

In summary, the VPH-G90 harnesses the best available technologies to reproduce extremely precise and bright images from a broad range of sources.

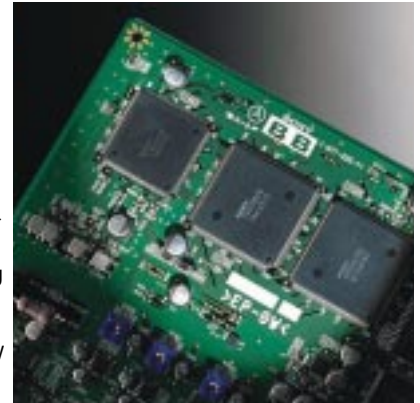**9-inch electromagnetic focus CRT**

Accurately Focused Images

To optimize picture focus, the VPH-G90 adopts built-in Axis Quadrupole/Diagonal Quadrupole (AQP/DQP) technology as well as another new development, Hexa Pole Adjustment.

In CRT projectors, beam distortion is likely to occur at the screen edges, with a consequent distortion of the spot shape. These technologies correct this beam distortion to give clearer and more detailed images from corner to corner of the screen.

Digital Reality Creation

Sony DRC (Digital Reality Creation) technology generates pictures which have four times the resolution of conventional video signals. Unlike conventional linear interpolation which uses filtering techniques, DRC generates a high resolution signal by referring to memorized waveform patterns.

DRC board

The VPH-G90 uses DRC to project higher density pictures in which details of the objects are enhanced.

3-dimensional Comb Filter and 3-line Filter

The VPH-G90 incorporates two kinds of electronic filtering technologies to separete the luminance signal and the chrominance signal. The 3-line Filter combines the data of three neighboring lines from the original signal to generate each interpolated line. For NTSC video reproduction, the 3-dimensional Comb Filter provides separation of luminance and chrominance signals referring not only the lines but also continuance fields. These filtering technologies reduce dot interference and cross color.

CONVENIENT OPERATING FEATURES

Picture Orbiting/Scan Line Shift Function

Similar to the 'screen saver' function for computer monitors, the Sony Picture Orbiting Function and Scan Line Shift Function reduce the risk of CRT burn in projectors. CRT burn is caused by prolonged image projection. For still images, the Picture Orbiting Function rotates the projected image at intervals that can not be detected by the human eye. Similarly, the Scan Line Shift Function, continuously shifts the sacn lines of the image to avoid CRT burn with video images.
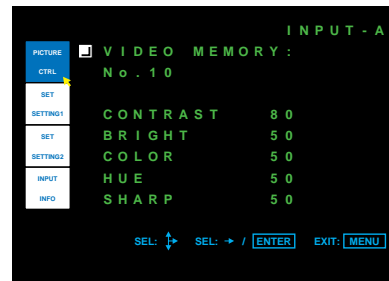
Power Saving Mode

Power consumption is reduced when the power saving mode of the VPH-G90 is set to on. When the projector detects that there has been no input signal for 10 minutes, it automatically enters power saving mode.

The projector quickly resumes full operation as soon as an input signal is detected or any operational key is pressed.

Multi-language On-screen Menu

The multi-language on-screen menu is provided to simplify operations. The on-screen menus can be displayed in any one of seven languages: English, French, German, Italian, Spanish, Japanese and Chinese.

On-Screen Menu

SYSTEM EXPANDABILITY AND VERSATILITY

Comprehensive Input Connections

The VPH-G90 has connections for RGB Component (Y/R-Y/B-Y), HDTV*, Y/C and composite video input signals. It also has two slots for optional interface boards from the Sony IFB Series. By connecting an optional Sony Signal

Interface Switcher PC-3000 fitted with appropriate IFB Series boards, several inputs can be connected simultaneously.

* The VPH-G90 supports 1125/60/2:1 and 1125/59.94/2:1 (SMPTE-240M/274M) HDTV systems.

RS-232C/422A/PJ COM* Communication Port

An RS-232C/422A interface is included as a communication port between the projector and a computer. A new addition is the PJ COM interface, this significantly enhances system integration with the Sony Signal Interface Switcher PC-3000. This PJ COM port provides simple daisy chain connection and intelligent mutual communication between multiple projectors, switchers and computers.

* PJ COM is in accordance with RS-485 protocol.

Remote Control Capability

All operations and adjustments of the VPH-G90 can be performed using the supplied RM-PJ1001 Remote Control Unit. For increased control flexibility in rear-projection and projection-wall applications, the optional RM-PJ10 Infrared Remote Control Receiver is also available.

RM-PJ1001

SIMPLE INSTALLATION AND ADJUSTMENTS

Universal Optical Coupling Accommodates Different Screen Sizes

Universal optical coupling enables the projector to be quickly and easily set up to reproduce images on screens with sizes ranging from 90 to 300 inches*. Fine adjustments can also be quickly performed with the VPH-G90. For example, the CRT and lens angles can be independently altered, both horizontally and vertically, while still monitoring the projected image.

* Viewable area, measured diagonally (Factory preset: 120 inches). An optional VPHL-9270 Projection Lens is available for the smaller screen sizes from 70 to 90 inches (Viewable area, measured diagonally).

Setup Memory Function

For easy setup and use, 137 sets of input conditions for different sources can be stored in the Input Memory. Parameters such as picture control, registration and RGB size/shift can be stored. Once this data is memorized, the projector automatically retrieves the most appropriate set-up condition for each signal. A Video Memory Function is also provided, storing up to 10 picture control settings. With these features, each input signal is optimally reproduced depending on the nature of its signal image. The picture aspect ratio can be switched between 4:3 and 16:9. This Video Memory Function is easily controlled from both the supplied RM-PJ1001 Remote Control Unit and the projector control panel.

Precise Registration

Precise registration is attained with new Key/Pin adjustments and "fine mode" settings in some adjustment menus. The new Key/Pin adjustment operates independently in the four areas of the screen: TOP, BOTTOM, LEFT and RIGHT. Additional "fine mode" settings provide more accurate and precise adjustments in the following setting menus: CENTER, SIZE, LIN, SKEW and BOW.

Polarity Change

Rear projection and ceiling mounted projection requires optical alignment and polarity changes. These changes are easily performed with combinations of the two slide switches inside the projector's top cover.

Selectable White Balance

The appropriate white balance setting is automatically retrieved when the operator selects the screen type - beaded or matte - via the on-screen display.

ABG (Automatic Background) Function

So that white balance is unaffected by ageing or temperature drift of the CRTs, each tube is individually controlled by ABG circuitry. Everytime the ABG function is switched on, the optimum white balance is determined. This operation takes 20 minutes and during this time a grey line is displayed at the top of the projected picture. This line then disappears, but the white balance settings are retained.

Handles for Mobility

Pop-out handles are attached to the front, back and sides of the projector for mobility. These handles can easily be pulled out when needed and pushed in when no longer required.

VIRTUAL REALITY AND SIMULATION APPLICATIONS

Registration Facilities for Accurate and Dynamic Images

In applications such as virtual reality and simulation, projectors are required to project accurate and dynamic images even at a deep throwing angles or onto curved or spherical curved screens*. In addition to the normal range of adjustments, the VPH-G90 has "simulation mode" settings that allow a wider range of adjustment.

* May requires custom-made projection lenses. For details, please consult your nearest Sony office.

Independent Brightness and Colour Uniformity Adjustments

With brightness and color uniformity adjustments, excellent uniformity is achieved from screen corner to corner. These two adjustments can be performed independently; this means that extremely even and precise adjustments can be made across the entire screen.

ABL/Picture Orbiting Link

In order to help prevent CRT damage, the VPH-G90 has an ABL (Automatic Brightness Limitter) in addition to its Picture Orbiting function. ABL circuitry controls the beam current so that it remains below the point where CRT damage may occur, but without affecting overall screen brightness. The ABL/Picture Orbiting linkage function is designed especially for multi-screen displays. If the ABL circuit is activated on any one projector in a multi-projector installation, then the beam current in all of the other projectors is similarly modified so that uniform brightness is maintained over the entire projected image. Similarly, if the Picture Orbiting function is used in any one projector, its orbiting pattern is linked to the other projectors.

Index Operation

In multi-projector applications, an index number can be assigned to each VPH-G90 to facilitate the operation and adjustment of individual projectors. The Group Index Function is also available which enables a particular group of equipment with a PC-3000 Signal Switcher to be given an index number. An indexed group can be controlled as a unit through a PC-3000 Signal Switcher.

OPTIONAL ACCESSORIES

REMOTE CONTROL UNITS

RM-PJ1001*
Infrared Remote Control Unit
- Wired/Wireless remote control unit for setup and operation
- Full remote operation
- Function keys can be illuminated for operation in dark rooms

*Supplied with the VPH-G90U/G90M

RM-PJ10
Infrared Remote Control Receiver
- Remote control satellite for rear projection or out-of-sight projector applications
- Extends the operating range of the RM-PJ1001 and RM-PJ3000S Remote Control Units

INTERFACE BOARDS

IFB Series Interface Boards can be fitted in the VPH-G90 Projector, the PC-3000 Signal Interface Switcher and IFB-1271/1271M Interface Unit.
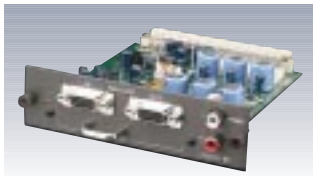
IFB-12A
- 5 BNC input/output
- Accepts analog RGB, component (Y/R-Y/B-Y), HDTV (Y/P$_B$/P$_R$, GBR), Y/C and composite video
- RGB bandwidth of 300 MHz Control Units

IFB-20
- Analog RGB input (D-sub 9-pin)
- RGB bandwidth of 120 MHz

IFB-21
- Analog RGB input/output (HD D-sub 15-pin)
- RGB bandwidth of 150 MHz

IFB-50
- Composite SDI BNC input/output
- Serial Digital Interface board for SMPTE 259 M-C/ITU-R BT656-3 4:2:2 video signals

IFB-1000
- Composite and Y/C input (Loop-through BNC/Loop-through Mini DIN 4-pin)

INTERFACE CABLES

Interface Cables are designed to connect IFB series Interface Boards with various signal sources. Using a SIC cable, a signal can be simultaneously connected to a local monitor as well as to the projector or signal interface switcher.

SIC-20A/20C
- Analog RGB
- D-sub 9-pin (female) to D-sub 15-pin (female)/D-sub 15-pin (male)
- Length: overall 2 m (6.6 ft), branch 0.2 m (0.7 ft)

SIC-22
- Analog RGB with digital sync
- D-sub 9-pin (female) to HD D-sub 15-pin (female)/HD D-sub 15-pin (male)
- Length: overall 2 m (6.6 ft), branch 0.2 m (0.7 ft)

SMF-400
- HD D-sub 15-pin to 5 BNCs
- Length: overall 2 m (6.6 ft)

SMF-401
- HD D-sub 15-pin to HD D-sub 15-pin
- Length: overall 2 m (6.6 ft)

RCC-5G/10G/30G
- 9-pin remote cable for RS-232C/422A
- D-sub 9-pin to D-sub 9-pin
- Length: 5, 10 and 30 m (15, 30 and 90 ft)

SCREENS

VPS-100FH
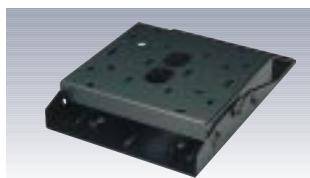- 100-inch flat screen

VPS-120FH
- 120-inch flat screen

SUSPENSION SUPPORTS

PSS-90
- Projector suspension support for the VPH-G90

PSS-10
- Projector suspension support

PROJECTION LENS

VPHL-9270
- For projection with screen sizes of 70 to 90 inches

OTHER

ADP-10
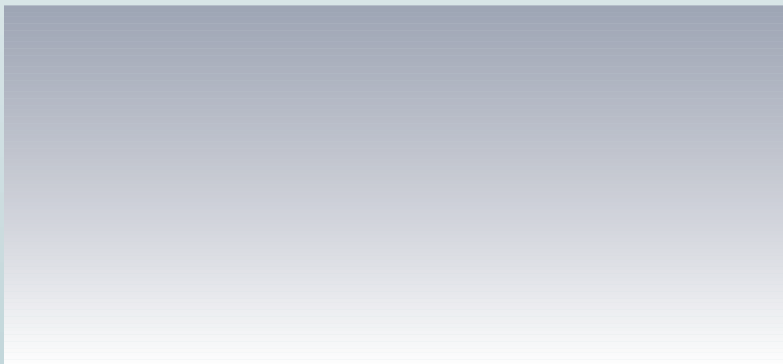- Signal adaptor, HD D-sub 15-pin to D-sub 9-pin

ADP-20
- Signal adaptor, Macintosh® to VGA

SIGNAL **I**NTERFACE **S**WITCHER
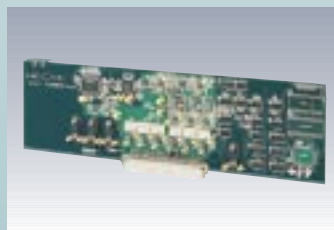

PC-3000
- Signal Interface Switcher with 300 MHz-wide RGB bandwidth
- Provides eight slots for optional interface boards and one fixed output with 150 MHz cable compensation.
- In addition to an RS-232C/RS-422A communication port, the PC-3000 is equipped with a PJ COM port, complying with RS-485. This enables mutual communication between projectors and the PC-3000s, expanding the versatility of system setup.
- Up to eight PC-3000 units can be connected, enabling up to 57 different signals to be connected in a system.
- Incorporates an LCD display in the front panel for easier setting and adjustment.
- Input selection of a connected projector, as well as the input selection of the PC-3000 itself, can be controlled via the front panel.

EXTENSION BOARD

EXB-5010
- Connects an RGB monitor with the PC-3000 Switcher.
- Converts HDTV (GBR), HDTV (Y/P_B/P_R) and component (Y/R-Y/B-Y) signals into RGB signals.
- Installs in the PC-3000 Switcher

REMOTE CONTROL UNIT

RM-PJ3000S
Infrared Remote Control Unit
- Laser pointing facility for a presentation use
- Switches input sources of both projector and switcher

SIGNAL **I**NTERFACE **U**NIT

IFU-1271/1271M
- Distributes an input signal from an IFB board to two outputs with 100 MHz bandwidth.
- The IFU-1271/1271M converts signals from a digital signal level to an analog signal level (TTL to 0.7 Vp-p) for output.

SPECIFICATIONS

MULTISCAN PROJECTOR

VPH-G90U/G90M

OPTICAL	
Projection System	3 picture tubes, 3 lensees, direct projection system
CRT	9-inch (Phosphor size 7.7-inch) high luminance optical coupled, electromagnetic focus tubes
Projection lenses	Double focus, F 1.15/167 mm (Color corrected: C element of Red/Green)
Screen coverage	90 to 300-inch viewable area, measured diagonally (Factory preset: 120-inch)
Light output	ANSI[*1] 350 lm (150 kHz: 50 Hz, 6500 K) ANSI 280 lm (15 kHz: 60 Hz, 6500 K) Peak white 1300 lm, All white 500 lm
Throwing distance	90-inch: 2514 mm
	100-inch: 2767 mm
	120-inch: 3278 mm
	150-inch: 4165 mm
	200-inch: 5542 mm
	250-inch: 6847 mm
	300-inch: 8294 mm

SIGNALS	
Color system	NTSC, PAL, SECAM, NTSC$_{4.43}$, PAL-M automatically selected
Resolution	700 TV lines (video), 1100 TV lines (HDTV) 2500 x 2000 pixels (RGB, measured at fH: 102 kHz, fV: 50 Hz)
Scanning frequency	Horizontal: 15~150 kHz
	Vertical: 38~150 Hz
RGB bandwidth	135 MHz (-3 dB)
Test signals	Crosshair, Hatch reverse (9 x 9/17 x 17), Dot (9 x 9), Dot (17 x 17) & Hatch (5 x 5), H/H reverse, ME/ME reverse, All white, Window, Window and line color bar, Pluge, Stair-step, Sub-pattern, Cross (9 x 9), Hatch (5 x 5), 10 IRE, 100 IRE

GENERAL	
Power requirements	VPH-G90U: AC 120 V, 50/60 Hz
	VPH-G90M: AC 220 to 240 V, 50/60 Hz
Operating temperature	0 to 40º C (14 to 104º F)
Operating humidity	35 to 85 %
Storage temperature	-20 to 60º C (-4 to 140º F)
Storage humidity	10 to 90 %
Dimensions	750 (W) x 385.5 (H) x 1066 (D) mm (29 5/8 x 15 1/4 x 42 inches)
Mass	Approx.110 kg (242 lb 8 oz)
Heat dispersion	VPH-G90U: 3563.1 BTU
	VPH-G90M: 3412.5 BTU

INPUTS/OUTPUTS		
VIDEO		
Composite:		Loop-through BNC, 1 Vp-p ±2 dB sync negative, 75 Ω automatic termination
Y IN:		BNC, 1 Vp-p ±2 dB sync negative, 75 Ω terminated
C IN:		BNC, Burst 0.286 Vp-p ±2 dB (NTSC), 75 Ω terminated or 0.3 Vp-p ±2 dB (PAL), 75 Ω terminated
Y/C IN:		Loop-through Mini DIN 4-pin
	Y:	1 Vp-p ±2 dB sync negatibe, 75 Ω automatic termination
	C:	Burst 0.286 Vp-p ±2 dB (NTSC), 75 Ω automatic termination or 0.3 Vp-p ±2 dB (PAL), 75 Ω automatic termination

INPUT A		
Analogue RGB /Component:		BNC
	R/R-Y/P$_R$:	0.7 Vp-p ±2 dB positive, 75 Ω terminated
	G/Y:	0.7 Vp-p ±2 dB positive, 75 Ω terminated
	G with Sync:	1 Vp-p ±2 dB sync negative, 75 Ω terminated
	B/B-Y/P$_B$:	0.7 Vp-p ±2 dB positive, 75 Ω terminated
	SYNC/HD:	Composite sync: 0.6~8 Vp-p, high impedance positive /negative
		Horizontal sync: 0.6~8 Vp-p, high impedance positive /negative
	VD:	Vertical sync: 0.6~8 Vp-p, high impedance positive /negative

HDVS (Y/P$_B$/P$_R$):		BNC
	Y:	1 Vp-p ±2 dB, 75 Ω terminated
	P$_B$/P$_R$:	Tri-sync: ±0.3 Vp-p, bi-sync: 0.3 Vp-p, ±0.35 Vp-p ±2 dB, 75Ω
HDVS (GBR):		BNC
	G with sync:	1 Vp-p ±2 dB, 75 Ω terminated Tri-sync: ±0.3 Vp-p, bi-sync: 0.3 Vp-p
	B/R:	0.7 Vp-p ±2 dB, 75 Ω terminated

INPUT B		
		Open slot for optional IFB boards

CONTROL S /PLUG IN POWER		
	IN:	Stereo Mini Jack 5 Vp-p, Plug-in power DC 5 V, Max. output: 60 mA
	OUT:	5 Vp-p

REMOTE		
	RS-232C /RS-422A: IN:	D-sub 9-pin (Female)
	PJ COM IN:	D-sub 9-pin (Female)
	(RS-485) OUT:	D-sub 9-pin (Female)

LINK		
	IN:	Stereo Mini Jack
	OUT:	Stereo Mini Jack

TRIG		
	Mini Jack	
	Power ON:	DC 12 V, Output impedance 4.7 kΩ
	Power OFF:	0 V

SAFETY REGULATIONS		
	VPH-G90U:	UL 1950 listed, cUL 950 (CSA No. 950), DHHS, DNHW, FCC Class A, IC Class A
	VPH-G90M:	EN60 950, (TÜV), CE, C-tick, PTB

ACCESSORIES	
Supplied accessories	
	Remote Commander RM-PJ1001
	Remote control cable 15 m (Stereo Mini Jack)
	Adjustmant plate
	AA size battery (x 3)
	AC power cord
	Operating manual
	Installation manual
Optional accessories	
Interface boards:	IFB-12A/21/40/50/1000
Signal interface cables:	SIC-10/20A/20C/22
	M1/M5/M15/M25/M50
Signal interface switchers:	PC-3000
	PC-1271/1271M[*3]
Interface unit:	IFU-1271/1271M
Suspention supports:	PSS-90
	PSS-10
Remote control receiver:	RM-PJ10
Signal adaptor:	ADP-20 (Macintosh to VGA)
HD-D-sub 15-pin to 5 BNC cable:	SMF-400
HD D-sub 15-pin to HD D-sub 15-pin cable:	SMF-401
9-pin remote cable:	RCC-5G/10G/30G (for RS-232C/422A)
100-inch flat screen:	VPS-100FH

[*1] ANSI lumen is a measuring method of the American National Standards Institute IT7.215

[*2] SIC-M cable requires IFB-40 signal interface board

[*3] To connect PC-1271/1271M requires IFB-40 and SIC-M cable

Control panel

Connector

SIGNAL INTERFACE SWITCHER
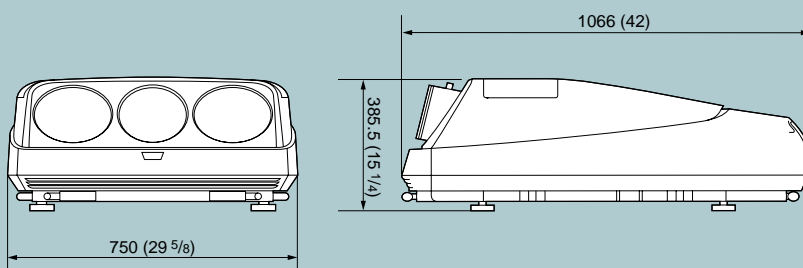
PC-3000

GENERAL	
Power requirements	100 to 240 V AC, 50/60 Hz (UL listed for 120 V AC operation, CE listed for 220-240 V AC operation)
RGB bandwidth	300 MHz -3 dB
Power consumption	80 W
Dimensions	424 (W) x 133 (3U) (H) x 420 (D) mm (13 11/16 x 5 1/4 x 16 17/32 inches)
Mass	9.3 kg (20 lb 7 oz)

OUTPUTS	
OUTPUT	BNC x 8, Mini-DIN 4-pin x 1
Output video signal:	Gain unity, impedance 75 Ω
Sync signal:	5 Vp-p (impedance high) 1 Vp-p (impedance 75 Ω)
Audio:	Gain unity, impedance 1 kΩ

CONTROL S	
IN/PLUG IN POWER	Stereo Mini Jack 5 Vp-p, Plug in power DC 5 V maximum output 60 mA
OUT	Stereo Mini Jack 5 Vp-p
TRIG	Mini Jack
Power ON:	DC 12 V output impedance 4.7 kΩ
Power OFF:	0 V

REMOTE	
RS-232C/422A	D-sub 9-pin (female)
PJ COM IN	D-sub 9-pin (female)
PJ COM OUT	D-sub 9-pin
REMOTE 2	Half pitch 26-pin

ACCESSORIES	
Supplied accessories	AC cable Rack mount kit for 19-inch rack Operating instructions Terminator
Optional accessories	Remote commander RM-PJ3000S Extension Board EXB-5010 9-pin remote control cable RCC-5G/10G/30G

SIGNAL INTERFACE UNIT

IFU-1271/1271M

GENERAL		
RGB bandwidth	100 MHz	
Power requirements	IFU-1271:	AC 120 V, 50/60 Hz
	IFU-1271M:	AC 220 to 240 V, 50/60 Hz
Power consumption	10 W	
Dimensions	180 (W) x 105 (H) x 185 (D) mm (7 1/8 x 4 1/4 x 7 3/8 inches)	
Mass	3 kg (6 lb 10 oz)	

INPUTS
Open for an optional IFB Series input module

OUTPUTS
5 BNC (x 2)
Phono x 2 (Stereo or monaural selectable)

ACCESSORIES	
Supplied accessories	AC power cord Operation manual

Dimensions

1066 (42)

385.5 (15 1/4)

750 (29 5/8)

Unit: mm (inches)

INSTALLATION EXAMPLES

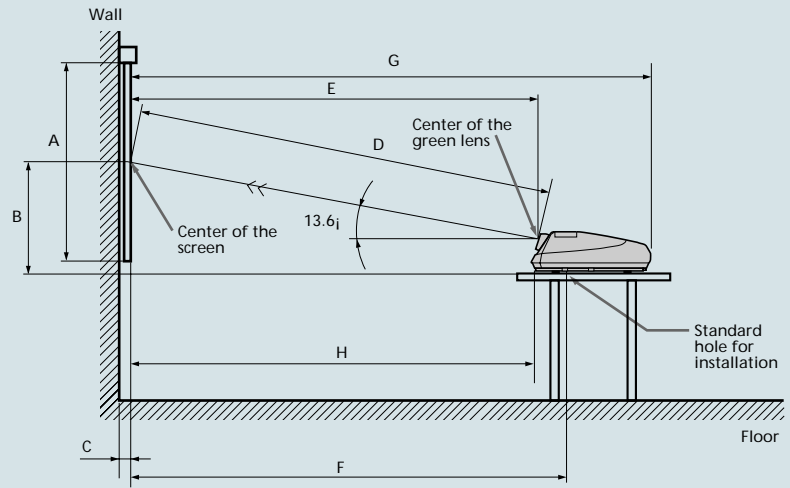## FLOOR INSTALLATION USING FRONT PROJECTION FLAT SCREEN

Be Sure That the Projector is Level to the Floor

B: Difference in height between the projector s bottom surface and the center of the screen

E: Horizontal distance between the center of the screen and the center of the green lens

F: Horizontal distance between the center of the screen and the standard hole for installation

Tolerances
B: –5 %
Other measurements: 0 % to +5 %

Wall

G
E
D
Center of the green lens
A
B
Center of the screen
13.6¡
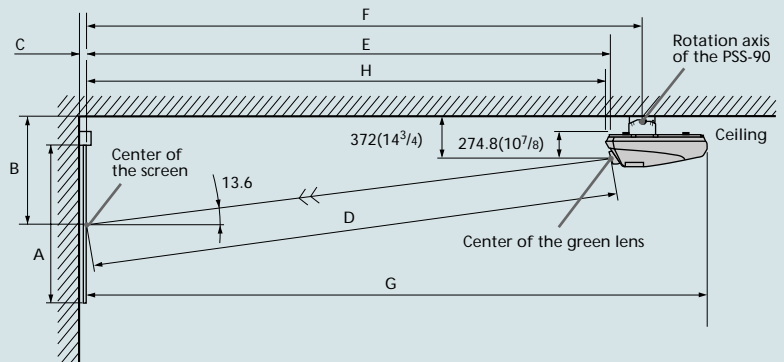H
Standard hole for installation
Floor
C
F

CEILING INSTALLATION USING FRONT PROJECTION FLAT SCREEN

Use the PSS-90 Projector Suspension Support (not supplied)

E: Horizontal distance between the center of the screen and the center of the green lens
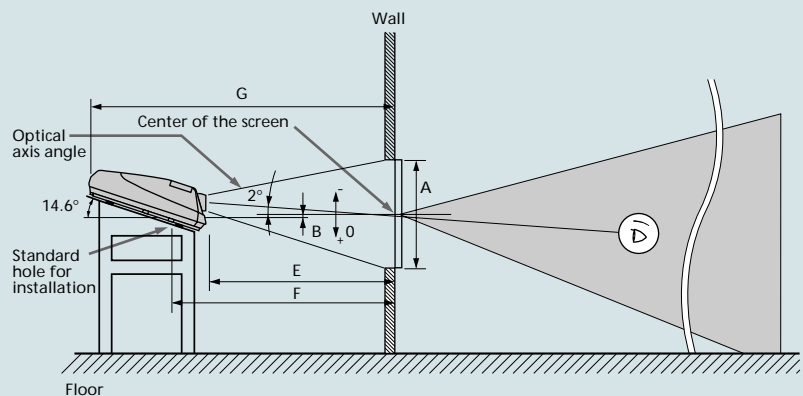
Tolerances
B: ±5 %
Other measurements: 0 % to +5 %

C
F
E
H
Rotation axis of the PSS-90
$372(14^3/4)$
$274.8(10^7/8)$
Ceiling
B
Center of the screen
13.6
D
Center of the green lens
A
G

FLOOR INSTALLATION USING REAR PROJECTION FLAT SCREEN

What the optical axis angle is ?

The optical axis angle is the angle between the horizontal level line and the straight line from the center of the projector's green lens to the center of the screen. When using a rear projection screen, you can get the brightest picture when the center of the screen is aligned with a straight line extension of the center of the green lens. Therefore, the most suitable optical axis angle varies depending on the height of the screen and your line of sight.

Wall

G
Center of the screen
Optical axis angle
2°
A
14.6°
B
0
Standard hole for installation
E
F
Floor

Screen Sizes (inches)	90	100	120*	150	180	200	250	300
A (V size)	1372 (54 1/8)	1524 (60)	1829 (72 1/8)	2286 (90)	2743 (108)	3048 (120)	3810 (150)	4572 (180)
B (H cent)	889 (35)	950 (37 1/2)	1074 (42 3/8)	1288 (50 3/4)	1488 (58 5/8)	1621 (63 7/8)	1942 (76 1/2)	2287 (90 1/8)
C (Width)		28a) (1 1/8)	32b) (1 5/16)					
D (TD)	2587 (101 7/8)	2847 (112 1/8)	3373 (132 7/8)	4285 (168 3/4)	5137 (202 1/4)	5702 (224 1/2)	7065 (278 1/4)	8533 (336)
E (X lens)	2514 (99)	2767 (109)	3278 (129 1/8)	4165 (164)	4993 (196 5/8)	5542 (218 1/4)	6867 (270 3/8)	8294 (326 5/8)
F (L hole)	2764 (108 13/16)	3017 (118 3/4)	3528 (138 7/8)	4415 (173 13/16)	5243 (206 13/32)	5792 (228)	7117 (280 3/16)	8544 (336 11/32)
G (L max)	3520 (138 5/8)	3773 (148 5/8)	4284 (168 3/4)	5171 (203 5/8)	5999 (236 1/4)	6548 (257 7/8)	7873 (310)	9300 (366 1/4)
H (L front)	2455 (96 21/32)	2708 (106 5/8)	3219 (126 23/32)	4106 (161 21/32)	4934 (194 1/4)	5483 (215 7/8)	6808 (268 1/32)	8235 (324 7/32)

a) Sony VPS-100FH
b) Sony VPS-120FH   * The distances in gray are the factory preset settings. Unit: mm (inches)

Screen Sizes (inches)	90	100	120	150	180	200	250	300
A (V size)	1372 (54 1/8)	1524 (60)	1829 (72 1/8)	2286 (90)	2743 (108)	3048 (120)	3810 (150)	4572 (180)
B (H cent)	985 (38 7/8)	1046 (41 1/4)	1170 (46 1/8)	1384 (54 1/2)	1584 (62 3/8)	1717 (67 5/8)	2038 (80 1/4)	2383 (93 7/8)
D (TD)	2587 (101 7/8)	2847 (112 1/8)	3373 (132 7/8)	4285 (168 3/4)	5137 (202 1/4)	5702 (224 1/2)	7065 (278 1/4)	8533 (336)
E (X lens)	2514 (99)	2767 (109)	3278 (129 1/8)	4165 (164)	4993 (196 5/8)	5542 (218 1/4)	6867 (270 3/8)	8294 (326 5/8)
F (L hole)	2932 (115 13/32)	3185 (125 3/8)	3696 (145 1/2)	4583 (180 13/32)	5411 (213)	5960 (234 5/8)	7285 (286 25/32)	8712 (342 31/32)
G (L max)	3520 (138 5/8)	3773 (148 5/8)	4284 (168 3/4)	5171 (203 5/8)	5999 (236 1/4)	6548 (257 7/8)	7873 (310)	9300 (366 1/4)
H (L front)	2455 (96 21/32)	2708 (106 5/8)	3219 (126 23/32)	4106 (161 21/32)	4934 (194 1/4)	5483 (215 7/8)	6808 (268 1/32)	8235 (324 7/32)

Unit: mm (inches)

Screen Sizes (inches)	90	100	120	150	180	200	250	300
A (V size)	1372 (54 1/8)	1524 (60)	1829 (72 1/8)	2286 (90)	2743 (108)	3048 (120)	3810 (150)	4572 (180)
B (H cent)	95 (3 3/4)	86 (3 1/2)	67 (2 3/4)	36 (1 7/16)	6 (1/4)	-13 (-17/32)	-60 (-2 3/8)	-111 (-4 3/8)
E (X lens)	2567 (101 1/8)	2926 (111 3/8)	3348 (131 7/8)	4252 (167 1/2)	5097 (200 3/4)	5659 (222 7/8)	7011 (276 1/8)	8467 (333 3/8)
F (L hole)	2873 (113 1/8)	3132 (123 3/8)	3653 (143 7/8)	4558 (179 1/2)	5402 (212 3/4)	5964 (234 7/8)	7316 (288 1/8)	8772 (345 3/8)
G (L max)	3594 (141 1/2)	3853 (151 3/4)	4375 (172 1/4)	5279 (207 7/8)	6124 (241 1/8)	6686 (263 1/4)	8038 (316 1/2)	9494 (378 7/8)

Unit: mm (inches)

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